AMERICAN BEE JOURNAL

DECEMBER, 1915

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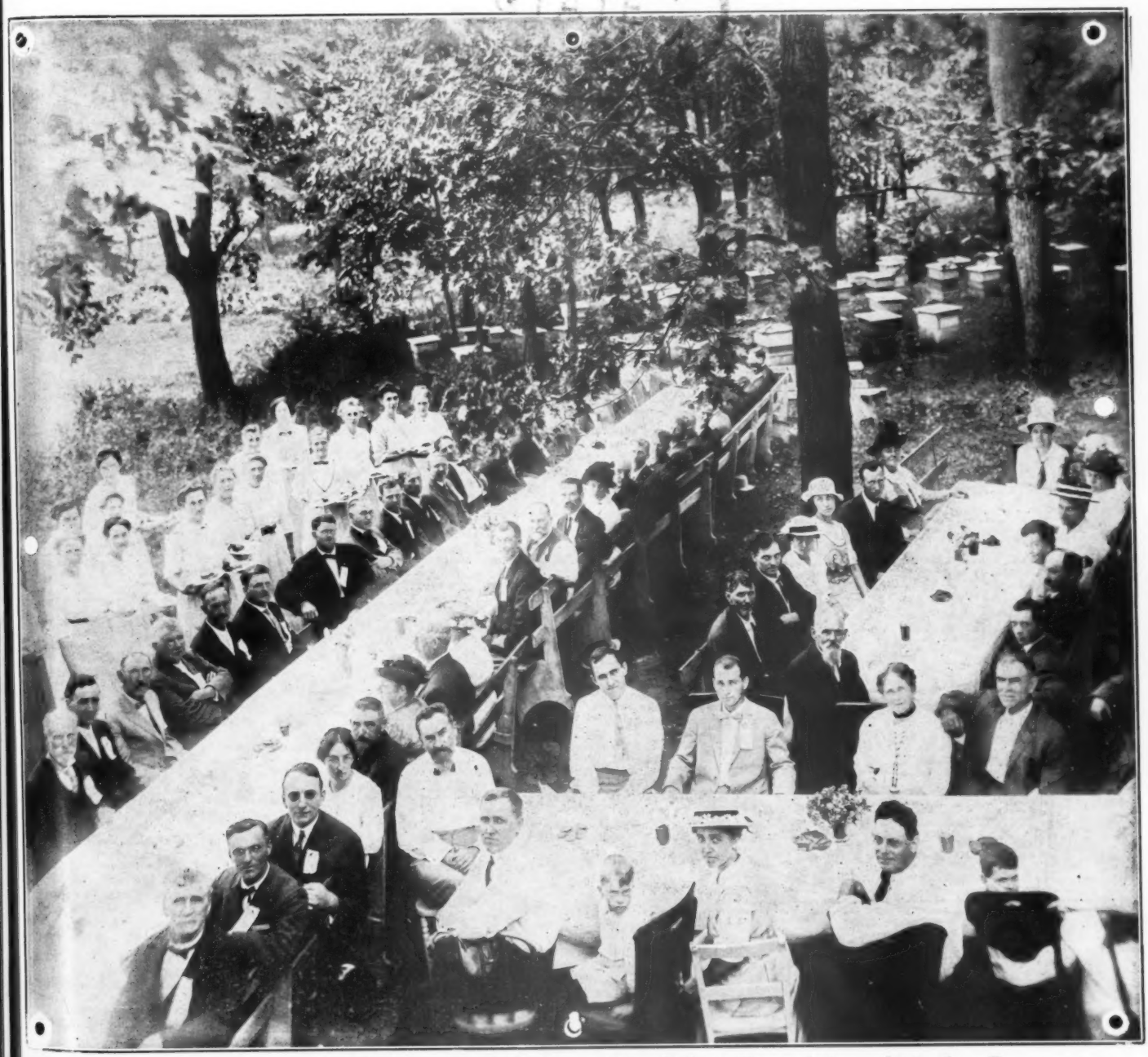

Dinner time at the Tri-State Field Meeting at the Dadant Home Apiary, September 7

American Bee Journal

AMERICAN BEE JOURNAL

ESTABLISHED IN 1861 — OLDEST BEE PAPER IN AMERICA

PUBLISHED MONTHLY BY

American Bee Journal

1st Nat'l Bank Bldg. Hamilton, Illinois

IMPORTANT NOTICE

THE SUBSCRIPTION PRICE of this Journal is $1.00 a year, in the United States of America and Mexico; in Canada, $1.10; and in all other countries in the Postal Union, 25 cents a year extra for postage. Sample copy free.

THE WRAPPER-LABEL DATE indicates the end of the month to which your subscription is paid. For instance, "dec15" on your label shows that it is paid to the end of December, 1915.

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LET US FIGURE WITH YOU

We know we can satisfy you on quality.
Write for catalog.

C.C.CLEMONS BEE-SUPPLY CO.
Dept. S., Kansas City, Mo.

Wanted

Choice Grades of
EXTRACTED HONEY

Send Sample and State Quantity
How packed and the lowest price you will take

We are always in the market for **Beeswax,** and pay highest market prices.

Hildreth & Segelken
265-267 Greenwich St., New York, N. Y

ALL WRITERS FIND THE EDITOR

Of invaluable assistance in the production and marketing of their manuscripts. One year (26 fortnightly numbers) costs $2.00; single copies cost 10 cents each. THE EDITOR for one year and "1001 Places to Sell Manuscripts" (a guide to the nearly 5000 markets for stories, novels, poems, plays, photoplays, etc., price alone $1.62, postpaid), together cost $3.12

THE EDITOR, Box 1024, Ridgewood, N. J.

Bees and Queens for 1916

GOLDEN AND LEATHER COLORED

We are now booking orders for April, May and June, 1916 deliveries at the following prices, viz.:

Prices of one and over	1	6	12	25
Virgins	$ .50	$2.75	$ 5.00	$10.00
Untested	.85	4.50	8.00	16.00
Warranted	1.10	5.50	9.50	19.00
Tested	1.50	7.50	13.50	26.00
Breeders	3.00 and up to $10.00 each.			

1-frame nuclei without queen	$1.50
2-frame " " "	2.75
3-frame " " "	3.50

When queens are wanted with nuclei add queens at above prices quoted for queen

½ lb. package, wire cages, without queens	$1.00
1 " " " " " "	1.50
2 " " " " " "	2.00

If queens are wanted with pound packages add at prices quoted for queens.

On all orders amounting to $50 and over we will allow 5 percent discount, and orders amounting to $100 and over will allow 10 percent discount from above prices.

We guarantee safe delivery on queens, and safe delivery on bees that are not in transit over five days.

OUR REFERENCE—Any Mercantile Agency, A. I. Root Co., or American Bee Journal.

Get into communication with us at once and book your orders early to avoid disappointments in the spring.

THE PENN COMPANY, Penn, Lowndes County, Mississippi

Representatives of The A. I. Root Company, and Queen Specialists.

We are in the Market

To buy both Comb and Extracted honey. Write us what you have to offer, naming your best prices delivered. Every time an interesting price is named us, we buy and remit the day shipment arrives.

SHIP US YOUR OLD COMB

We render it into wax, and pay the market prices.

THE FRED W. MUTH COMPANY

204 WALNUT STREET "The Busy Bee Men" CINCINNATI, OHIO

QUEENS OF QUALITY

The Edltor of the *Beekeepers' Review* and his sons have 1100 colonies of bees that they work for extracted honey. With all those bees working with equal advantage, all having the same care and attention, they have an opportunity unexcelled to ascertain without a reasonable doubt colonies desirable as breeders from a honey-producers' standpoint. Likely never in the history of beekeeping was there a better opportunity to test out the honey getting strain of bees than this. Think of it, 1100 colonies with equal show, and a dozen of those colonies storing 250 to 275 pounds of surplus honey this last poor (with us) season, while the average of the entire 1100 was not more than 40 pounds per colony. We have sent two of our very best breeding queens (their colonies producing 275 pounds surplus each during the season of 1915) to John M. Davis and to Ben G. Davis, both of Spring Hill, Tenn., and they will breed queens for the *Review* during the season of 1916 from those four superiot honey-gathering breeding queens. Those young queens will be mated with their thoroughbred drones. Our stock is of three-banded strain of Italians, also that of John M. Davis, while Ben G. Davis breeds that disease resisting strain of goldens that is becoming so popular.

By this time you are likely thinking that your strain of bees may be improved by the addition of this superior strain of *Review* queens, and how you can secure one or more of those superior honey-gathering queens as breeders. We will tell you: They will be sold to none except *Review* subscribers. If you are a paid-in-advance subscriber to the *Review* for 1916, we will mail you one of the daughters of those famous queens in June for a dollar. If not a subscriber to the *Review* for 1916, send $1.75 for a year's subscription to the *Review* and one of those famous young queens. Those queens are well worth $2.00 each compared to the price usually charged for ordinary queens, but we are not trying to make money out of this proposition, only we are anxious to have every subscriber of the American Bee Journal a subscriber of the *Review*, and we are taking this way to accomplish the object. A few of the very first orders for queens that we receive can be mailed in May, but the majority will not be mailed until June. Orders filled in rotation. Have your order booked early and avoid disappointment. Address, with remittance,

THE BEEKEEPERS' REVIEW, Northstar, Michigan

American Bee Journal

Bingham Bee Smokers and Uncapping Knives

Have been on the market nearly 40 years, and are the standard in this and many foreign countries. Insist on the genuine improved articles from your dealer or direct from manufacturers.

Postage extra		ship. wt.	Price
Smoke Engine,	4 inch,	28 oz.	$1.25
Doctor	3½ "	26 oz.	.85
Conqueror	3 "	23 oz.	.75
Little Wonder	2½ "	16 oz.	.50
Smoke Engine or Doctor in copper			50c extra
Uncapping Knives, improved Cold Handle			
Stan'd Length	8⅛ "	20 oz.	.75
Extra long	10 "	24 oz.	.85
Steam Heated 3 feet tubing		36 oz.	2.50

Friction-top pails, 5 lb., size per 100, $4.50; 10-lb. size per 100, $6.25; 60-lb. cans two in a case, 10-case lots, 60c; 25-case lots, 59c; 50-case lots, 58c per case, f. o. b. Chicago. State quantity wanted and get our shipping case prices.

Woodman's double-wall Protection Hives, single-wall hives, Good enough Brand Sections, shipping cases, foundation, and all supplies. Send us a list of the goods wanted and let us figure on your 1916 requirements.

A. G. WOODMAN CO., Grand Rapids, Mich.

SUPPLY YOUR Honey Customers

With fine Alfalfa, Clover or Amber Fall Honey

We can supply you in packages to suit your trade. Any Quantity.

Also a limited amount of nice comb honey for sale. *Write us now.*

DADANT & SONS
Hamilton, Ill.

TIN CANS

Low Prices on tin cans, especially the Friction-Top style. We buy in carlots and can save you money

DADANT & SONS
Hamilton, Illinois

YOU CAN GET
RUBBER STAMPS

For marking Honey Sections as required by U. S. law, and all other purposes, from

Collier Stationery Co.
Keokuk, Iowa

Catalogue of stamps and supplies sent on request.

SHIPPING CASES

We have them and sell at the old price. Send us a list of what you want or send for catalog of the best and cheapest bee supplies of all kinds.

H. S. DUBY & SON, St. Anne, Ill.

INTRODUCING OUR PRINTING DEPARTMENT

The accompanying illustration shows a view of a part of our well equipped and thoroughly modern printing office, in which are printed the many books, booklets, folders, etc., which we publish on Bees and Beekeeping, among them our well known encyclopedia, the "ABC & XYZ of Bee Culture," (now published in four languages), as well as our 64-page catalog of Beekeepers' supplies, and our illustrated magazine "Gleanings in Bee Culture." We are also prepared to quote prices on honey labels, of which we have many beautiful designs, as well as printed cartons for comb honey, etc., etc. Ask for our honey label catalog, as well as for a list of our publications.

The A. I. Root Company, Medina, Ohio

American Bee Journal

What- going to pass up a 4 percent cash December Discount?

Many beekeepers do not prepare for the unusual honey-flows that come in some sections after they have almost given up hopes of getting any surplus honey, and are, therefore, caught off guard. A few dollars put into supplies at this time of the year will put you in shape to take advantage of the early flows, and as you need more supplies subsequent orders can be placed. The 4 percent discount will almost pay the freight and give a running start over those who neglect to put in their supplies this fall.

The quality of workmanship and material is unsurpassed. Some of your neighboring beekeepers will be glad to show you some of the goods they have purchased of us.

Red Catalog, postpaid - "Simplified Beekeeping," postpaid

DEALERS EVERYWHERE

W. T. Falconer Mfg. Co., Falconer, New York

Where the good bee-hives come from

The CANADIAN HORTICULTURIST AND BEEKEEPER

The only bee publication in Canada

It is the official organ of the Ontario Beekeepers' Association, and has incorporated with it the former Canadian Bee Journal.

Beekeeping and Horticulture in its various branches are effectively combined to form a live, attractive, and practical monthly magazine.

Well illustrated and up-to-date. Subscription price postpaid.

Canada, $1.00 a year. United States, $1.25 a year. Foreign, $1.50 a year.

Sample Copy sent free on request.

The Horticultural Publishing Co., Limited, Peterboro, Ont., Can.

Honey Jars

No. 25 screw cap jars, 1-lb., $4.60 gross. Shipping cases, cartons and cans. Amber honey, 7½ cts. a lb. Light amber 8½ cts. a lb. on two 60-lb. can lots. Catalog of supplies free. I. J. STRINGHAM,

105 Park Place, N. Y.

APIARIES: Glen Cove, L. I.

Scientific Soil Culture

Are you making money on your farm; are your debts paid; and have you a balance in bank; or are you just making a living and paying interest on a mortgage?

In either case we can help you. We can help you to double that bank account or to lift that mortgage. We can help you to get bigger yields and a better price for your crops. We can double the earning power of your farm by increasing your own efficiency.

You know something about the Campbell System. If you want to know all about it, write for particulars to

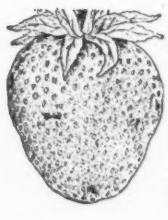
CAMPBELL CORRESPONDENCE SCHOOL

323 Broadway - Billings, Montana

LEGHORN BREEDERS!

Send in your subscription to **The Leghorn Journal** and keep posted on the progress of the Leghorn industry; as it is devoted exclusively to the different Leghorn fowls. Subscription price 50c per year. Special offer—Send us 10c and the names of five of your neighbors interested in Leghorns, and we will send you The Leghorn Journal for three months.

THE LEGHORN JOURNAL
Appomattox, Virginia



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Trial Subscription To Fruit and Garden Paper

Tells about planting, pruning, spraying and selling fruit and garden truck.

Ask Us Your Hard Questions.

We conduct this department for the special benefit of our subscribers. Experts answer all questions by mail and through the columns of the magazine.

Fruitman and Gardener, 1111 Main St. Mt. Vernon, Ia.

Help Advertise Honey

—By putting—

EAT HONEY
NATURE'S OWN SWEET—AIDS DIGESTION

Stickers on all letters, packages, shipments etc. Printed in bright red, already gummed. Price, postpaid, 500, 20C; 1000, 30C.

Pearce Method of Beekeeping.—This is an illustrated booklet explaining the keeping of bees in house attics or lofts, whereby any one, either in city or country, is enabled with only a small expenditure of labor to get a lot of honey without coming in contact with the bees. The methods are all fully explained. Price, 50 cents; or with the American Bee Journal one year, both for $1.25.

American Bee Journal

TENNESSEE-BRED QUEENS

47 Years' Experience in Queen Rearing—Breed 3-Band Italians Only

	Nov 1 to May 1			May 1 to June 1			June 1 to July 1			July 1 to Nov. 1		
	1	6	12	1	6	12	1	6	12	1	6	12
Untested.....	$1.50	$7.50	$13.50	$1.25	$ 6.50	$11.50	$1.00	$ 5.00	$ 9.00	$ .75	$ 4.00	$ .75
Select Untested	2.00	8.50	15.00	1.50	7.50	13.50	1.25	6.50	12.00	1.00	5.00	9.00
Tested.....	2.50	13.50	25.00	2.00	10.50	18.50	1.75	9.00	17.00	1.50	8.00	15.00
Select Tested..	3.00	16.50	30.00	2.75	15.00	27.00	2.50	13.50	25.00	2.00	10.00	18.00

Bees by the pound, 1 lb., $1.25; 2 lb., $2.25; 3 lb., $2.75.
Nuclei (no queen) 1 fr. $1.50; 2 fr., $2.15; 3 fr. $2.75; 4 fr., $3.50; pure 3-band Italians. Select queen wanted, add price.

Capacity of yard, 5000 queens a year—Select queen tested for breeding, $5.00
The very best queen tested for breeding, $10

Queens for export will be carefully packed in long distance cages, but safe delivery not guaranteed.

JOHN M. DAVIS, SPRING HILL, TENN.

THE BOOSTER

In its current and coming numbers will discuss the following policies which constitute its platform of principles.

First—Uniform quality of product, honestly graded and attractively displayed.

Second—A system of distribution that will protect the local producer, and prevent flooding one district and leaving others bare.

Third—A system of crop reports that will give accurate, detailed, and trustworthy information as to crop conditions in all sections promptly and intelligently.

Fourth—An efficient method of presenting facts and reasons for the wider use of honey in cooking, in the arts, manufactures, and on the table, to the people who who would use it if they knew.

Fifth—An association of beekeepers who will carry these things forward to a successful consummation.

Are you interested in these policies? Wrap a quarter in paper and send it AT OUR RISK, and get these valuable numbers, and the rest of the good things for the coming year.

Address, THE BOOSTER, Redkey, Indiana

GRAB'S AUTOMATIC FOOT SCRAPER

Give Your Wife a Smile for Christmas

When a fellow comes in from the barn on one of those wet days when most of the farm sticks to his shoes, it is almost impossible to get them clean with an ordinary scraper. Surprise your wife by placing an **Automatic Foot Scraper** at the back door. Mud, snow, dust and dirt will not be tracked over your floors if you use

GRAB'S FOOT SCRAPER

outside your door. The only device made which cleans bottoms and sides of shoe in one operation. Has ten parallel plates for scraping soles and two stiff bristle brushes which cleans sides of shoe.

AUTOMATICALLY ADJUSTS ITSELF

to any size shoe. Handsomely enameled. Looks neat. Can be rotated and swept under. Fastens to doorstep or any handy place Get one and save yourself useless work. **Price, $1.00.**

We offer the Bee Journal one year with foot scraper; both only $1.50

AMERICAN BEE JOURNAL, HAMILTON, ILLINOIS

PONTIAC ENGRAVING CO.
ARTISTS
ENGRAVERS-ELECTROTYPERS
542-550 S. DEARBORN ST.
PONTIAC BLDG. CHICAGO.

First Lessons in Beekeeping.—A 190-page bee-book, well illustrated, and with attractive paper cover. As its name indicates, it is primarily for the beginner, but is useful as well to the experienced beekeeper. A general outline of the bee, its work, appliances for beekeeping, honey, etc., is given. Price, 50 cents, postpaid, or with American Bee Journal one year, only $1.00.

HONEY AND BEESWAX

CHICAGO, Nov. 16.—Arrivals of honey, both comb and extracted, are in excess of the demand at this time. Yet, that is a normal condition, as it pays to get comb honey into market before cold weather, which always has a tendency to take the elasticity out of the comb; thus making it more liable to break away from the wood.

There is no material change in prices of the best grades of white comb, although sellers to obtain a sale of a large quantity will lower the price, which now ranges from 16@17c per pound for the two highest grades. Amber grades range at from 12@14c per pound. Sections with more than one color and empty cells bring from 10@12c per pound. White extracted honey ranges in price from 7@9c per pound, sales being chiefly made at 8c per pound, as only a very ripe high flavored honey will sell at 9c per pound, and that in a single can or case way. Ambers are ranging from 5½@6c per pound, with some highly flavored, ripe and of heavy body at 7c per pound. Beeswax is dull at 28@30c per pound. R. A. BURNETT & Co.

KANSAS CITY MO., Nov. 16.—There is not very much change in our honey market since our last quotations. The supply of both comb and extracted honey is large. We quote No. 1 white comb honey, 24 section cases, $3.15 to $3.25; No. 2, $2.75 to $3.00; No. 1 amber comb honey, $3.00 to $3.10; No. 2, $2.50 to $2.75. White extracted, per pound, 7½@8c; amber, 5½@7c. No. 1 beeswax, 28c; No. 2, 25c per pound.

C. C. CLEMONS PRODUCE COMPANY.

CINCINNATI, Nov. 11.—The demand for honey is increasing, which is the general rule for this time of the year. Comb honey is selling fast at $3.75 to $4.00 per case for fancy white. Amber comb honey is not wanted in this market at any price. For choice white clover extracted honey we are getting from 7@9c a pound; for amber extracted in barrels from 4@7c, according to the quality and quantity purchased. We are paying 28c a pound delivered here for choice bright yellow beeswax. THE FRED W. MUTH CO.

DENVER, Nov. 20.—The new crop of comb honey is selling locally at the following prices: Fancy, $3.60 per case of 24 sections; No. 1, $3.38, and No. 2, $3.15. Local prices on extracted honey unchanged, namely white, 8½@8¾c; light amber, 8@8¼c; amber, 7@8c, demand light. We pay 25c per pound in cash and 27c per pound in trade for clean yellow beeswax delivered to us here.

THE COLO. HONEY-PRODUCERS' ASS'N.
Frank Rauchfuss, *Mgr.*

NEW YORK, Nov. 18.—The new crop of comb honey is rather slow in arriving; still there is not a very heavy demand as yet, probably due to the intense hot weather of late. Prices are ruling at from 15@16c per pound for fancy white; 13@14c per pound for No. 1; 10@12c per pound for off grades. The market on extracted is quiet and inactive; there seems to be an abundant supply of clover and linden as well as California sage and alfalfa. West Indian honey is arriving right along with prices showing a downward tendency.

Beeswax is coming in steadily at from 30@31c per pound.

HILDRETH & SEGELKEN.

LOS ANGELES, Nov. 19.—The market quotations on California honey are as follows: White extracted honey 6c per pound; light amber, 4c. Beeswax, 25c. Fancy white comb honey, $2.75 per case—all f. o. b. Coast.

HAMILTON & MENDERSON.

INDIANAPOLIS, Nov. 16.—Comb honey is arriving quite freely as well as extracted of fine quality. The demand for comb and extracted is good, more especially comb. We quote as follows: No. 1 choice white comb, $4.00 per case; choice light amber, $3.75; No. 2 white comb, $3.50 per case. Extracted of excellent quality in 60-pound cans, in small lots, 9½@11c per pound.

We are paying 28c cash or 30c in trade for good beeswax delivered here.

W. S. POUDER,

MORE MONEY FOR YOUR HONEY

WHEN PACKED IN

LEWIS SUPERB SHIPPING CASES

After you have harvested a nice lot of comb honey do not make a serious mistake by putting it up ready for the market in a cheap appearing case such as a home-made one or that turned out by a local planing mill. The best and most economical (taking the sale of the honey into consideration) case must be turned out with the same careful workmanship and with the same selection of proper material as goes into the making of first-class bee hives and honey sections such as we manufacture.

It is an acknowledged fact that comb honey put up in attractive Lewis Shipping Cases will bring from one to two cents per pound more than the same honey put up in poor cases. Do not cheapen your product by inferior cases. You can afford the best—remember your shipping cases are the show windows for your goods. Your honey will bring more money if well displayed.

INSIST ON THE LEWIS MAKE

Lewis Shipping Cases are cut accurately out of clear, sound basswood lumber. All of these cases are neatly packed, and include the proper size nails for nailing them up.

For sale by us and the following Lewis distributers:

CALIFORNIA	W. A. Trickey	Bishop
COLORADO	Colorado Honey Producers' Association	Denver
COLORADO	Grand Junction Fruit Growers' Association	Grand Junction
COLORADO	Delta County Fruit Growers' Association	Delta
COLORADO	Producers' Association	De Beque
COLORADO	A. S. Parson	Rocky Ford
COLORADO	Coffin & Foster	Rifle
COLORADO	J. Roscoe Miller	Montrose
GEORGIA	J. J. Wilder	Cordele
IDAHO	City Grain & Poultry Co	Nampa
ILLINOIS	Dadant & Sons	Hamilton
IOWA	Louis Hanssen's Sons	Davenport
IOWA	Adam A. Clarke	Le Mars
IOWA	H. J. Pfiffner	Emmetsburg
MICHIGAN	A. G. Woodman Co	Grand Rapids
NEW MEXICO	C. F. Reynolds	Artesia
NEW MEXICO	H. H. Brown	La Plata
NEVADA	H. Trickey	Reno
OHIO	Fred W. Muth Co	Cincinnati
OREGON	Chas. H. Lilly Co	Portland
TENNESSEE	Otto Schwill & Co	Memphis
TEXAS	Southwestern Bee Company	San Antonio
UTAH	Foulger & Sons	Ogden
WASHINGTON	Chas. H. Lilly Co	Seattle
PORTO RICO	Fritze, Lundt & Co. S	Ponce
ENGLAND	E. H. Taylor	Welwyn

G. B. LEWIS COMPANY

Sole Manufacturers

Watertown, - Wisconsin

AMERICAN BEE JOURNAL

(Entered as second-class matter at the Post-office at Hamilton, Ill., under Act of March 3, 1879.)

Published Monthly at $1.00 a Year, by American Bee Journal, First National Bank Building

C. P. DADANT, Editor.
DR. C. C. MILLER, Associate Editor.

HAMILTON, ILL., DECEMBER, 1915 **Vol. LV..—No. 12**

A Beekeeper's Life Story

In the January number, we will begin a short autobiography of our esteemed and much appreciated co-worker, Dr. Miller. Persons who are not acquainted with the circumstances, as to our connection with our aged friend, may wonder that we should take any space to publish the autobiography of an editorial associate, but those who know him are aware of the fact that Dr. Miller is not solely a constant contributor of the American Bee Journal. His work with Gleanings in Bee Culture is as much appreciated and as regular as his work with us. He has often written for magazines, and was the apiarian authority of one of the best unabridged dictionaries, the "Standard Dictionary." He is therefore a national character in beekeeping. Nay, his standing is international, for all who have perused the English, French, Swiss, Italian, Japanese, German or Russian bee-publications have frequently met his name.

Dr. Miller has been called the "Nestor" of American beekeeping. Perhaps some of our readers, not versed in Greek mythological history, will wonder what that name means. Nestor was one of the Greek chiefs who took part in the Siege of Troy. In order that our friends may judge whether the title was properly applied, let me quote what Larousse says of Nestor: "He was the oldest of the Greek heroes. With a consummate experience in all things, he had nevertheless retained the vigor of mature age, and was as valiant as wise in counsel. Nestor has remained the emblem, the personification of wise, experienced and benevolent old age."

Those of our subscribers who have had occasion to ask questions to be answered in Dr. Miller's special department can all tell whether this description fits him.

The autobiography will be short,

DR. MILLER AT 84

running through four or five numbers of the Journal. It will be accompanied by eight or ten photographs and daguerreotypes, some of which were taken in his young days, some 70 years ago. It will not be accompanied by lengthy apiarian descriptions or accounts. Much of our old friend's beekeeping experience has been mentioned in "Fifty Years Among the Bees," and this is not to be a repetition. It will be an octogenarian's account of his young days, of his fight through life while turning to this particular pursuit, and if our subscribers enjoy the reading of it half as much as did the writer of this announcement, we will be satisfied.

Most of our readers are aware of Dr. Miller's extraordinary crops of comb honey. These immense crops were due to his judgment in the selection of reproducers, to getting the largest possible force of field bees ready for the harvest and to careful and attentive management during the harvest. We might expect him to speak of the results achieved, but he says nothing of that in his autobiography. We sent him some enquiries to which he replied as follows:

What is the largest number of colonies which you have kept at one time? "I never had more than 400 colonies of bees and they were kept in four apiaries."

Have you kept a record of the amount of honey you have produced altogether? If so, what is the total? "No, I've no idea of the amount of honey I have produced. A hundred tons might be a conservative guess."

Although very interesting in his pub-

American Bee Journal

lished writings, Dr. Miller is still more so in his private correspondence, which bristles with witticisms and bons mots. In private, he uses the reformed spelling—phonetic spelling—recommended by the American Philological Association, which was used by our former editor, Geo. W. York, in the American Bee Journal for several years. This sometimes adds piquancy to his reremarks. May we give some samples of his private correspondence without indiscretion?

The autobiography was begun in December, 1914, at our request, but was delayed by one thing and another and lately by our demand for photographs, to illustrate it. At one time we wrote the Doctor an appreciation of an excellent editorial he had sent us and asked him about the biography. Here is a part of the reply:

"Yours of 11th came this morning and, as always, I read it aloud. Mrs. M. said, 'That's a good letter.' Her sister added, 'It ought to warm the cockles of your heart.' Fact is—no use denying it—you're an appreciative cuss—tomer, and I appreciate appreciation. I suppose now I ought to be very modest and depreciate any special value in what I wrote. I'm not modest, not a bit; I think it's one of the best things I ever wrote—thot so when I sent it.

"You're evidently just a bit afraid that I'll never get started at that autobiography. You forget that I have a wife, also that she is a warm friend of yours. So it was only the natural thing that in her gentle persuasive way she should keep me reminded of it. As a result I began it quite a number of days ago. But so many duties come in that I don't get on very fast. If I get something done at it today, then it may be crowded out for several successive days. Another thing that makes it go slow is that I am making it very full, putting in trivial things that the public can take no interest in, altho perhaps as a personal friend they may interest you. The reason for it is that I am writing it at the same time for my family, and you can omit all you don't care for, while you couldn't add if I omitted."

Regarding the photos, we wanted to show Dr. Miller at work, in shirt sleeves, among his bees, but whether from his own fancy or from the desire of the ladies, it was thought best to have his "picture took" in style, and he wrote: "It was thot my whiskers were a little too bushy to be fit for a picture to occupy so exalted a position as contemplated (American Bee Journal cover page), so I went to the barber and askt him to trim them off a little. Instead of that he took off so much that you wouldn't want to present me in such a plight; so now I've got to wait for at least a little growth. Fortunately the growth is pretty rapid."

After the pictures were taken: "The fotografer wrote me last week that he would have the picture finisht Saturday. It is now Thursday and no picture yet. You're better off than I am; all you need do is to feel disgusted at the way I am treating you, while besides being disgusted at the fotografer, I'm distrest at the thot of being lowered in your esteem, an esteem that I hold in high estimation."

Nestor was said to be 90, when his counsels were of such high value to the Greek warriors. Dr. Miller will be 85 at his next birthday and appears as lucid as ever in all that he writes. It must be due to his equanimity and sobriety, an example for us all.—C. P. D.

The Food Value of Honey

IN the days of our grandfathers honey had a place on every table. Honey and maple syrup were the only sweets supplied to the family. Refined sugar, as now used, was unknown. A few bees were kept to supply honey, the same as a cow was kept to furnish the family milk and butter. As the conditions of the country changed and ways of living became more complicated, new food products appeared upon our tables, and substitutes took the place of things formerly regarded as necessities.

The dairy interests of the country made a tremendous fight to prevent oleomargarine from replacing butter and the sentiment created by this organized effort was sufficient to create a demand for butter from the American public, rather than for its cheaper and inferior substitute.

Unfortunately, the beekeepers have not been organized, and while butter has continued to grow in demand and sell at constantly higher prices, the demand for honey which was once well nigh universal has been largely supplied by corn syrup and other inferior products, while honey sells at a lower price than it brought half a century ago.

The beekeeper who offers his product for sale constantly meets the statement that honey is a luxury which the man of small income cannot afford to buy. Even the beekeeper himself has accepted this view, and undertaken to build a market on this basis.

Is honey a luxury? While it may not be a necessity, no more is it a luxury than is butter or beefsteak. Some writers have pointed out that because one could not live on honey alone, it was a luxury and should be sold as such. One could as well live on honey alone as on butter alone, yet no one regards butter as a luxury.

A fair basis of values of food products is the actual food units which they contain. In order to secure reliable information as to the food values of the products which we wish to compare with honey, we have taken the table compiled by Hon. W. B. Barney, of the Iowa food and dairy department. With this table at hand we went to a retail store in Keokuk, Iowa, where probably the usual retail prices prevail, and purchased different products of equal food value.

Figure 1 shows 3 articles, with food value equal to 7 ounces of honey. For the quart of milk we paid 10 cents, for the codfish 20 cents, and for the eggs 25 cents. Milk and eggs are generally recognized as necessities, yet as far as food value is concerned the eggs cost more than twice as much as the honey and the milk is slightly higher in price.

In Fig. 2 is shown a 12-ounce steak which costs at retail 15 cents, yet which, according to Mr. Barney's table, is only equal to 7 ounces of honey in food value. When beefsteak is regarded as a necessity even by those who are working for the lowest wages, why should the beekeeper permit the impression to grow that his product is a luxury at half the price? Nine cents

FIG. 1.—FOUR ARTICLES OF EQUAL FOOD VALUE

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FIG. 2.—SEVEN OUNCES OF HONEY IS EQUAL IN FOOD VALUE TO THE OTHER ARTICLES SHOWN

worth of cream cheese is equal to 7 ounces of honey, yet even this costs more than the product of the hive. Thirteen cents worth of walnuts are necessary to equal the small jar of honey. Since extracted honey usually sells at less than 16 cents per pound at retail, 7 cents will not be far from the cost.

Figure 3 shows that 8 oranges, which cost 20 cents, supply an amount of food equal to 7 ounces of honey, and 5 bananas, at 25 cents per dozen, cost 10 cents..

The following table shows the amount of the various items required to supply food value equal to 7 ounces of honey, according to the above mentioned authority. The retail prices that prevail at this time are also given:

Honey, 7 ounces - -	7 cents
Cream cheese, 5.6 ounces -	9 "
Eggs, 10 - - - -	15 "
Round beefsteak, 12 ounces	15 "
Boneless codfish, 15 ounces	20 "
Oranges, 8 - - - -	20 "
Bananas, 5 - - - -	10 "
Walnuts, 8½ ounces -	13 "

The above items are in general use, and few if any of them are regarded as luxuries. By reference to the above table it will be seen that as far as actual value is concerned, honey is one of the cheapest of the ready-prepared foods. Only such raw products as potatoes, cornmeal, beans, etc., which must be prepared for the table after purchase, are cheaper in food value, at current prices than is honey.

Since honey is a concentrated food product and contains little waste, it can very fairly be compared with other concentrated products like butter. If butter is worth the prices at which it sells, honey could be sold at much higher prices, without injustice to the consumer.

According to a recent number of the South African Farmer's Weekly, honey sells in many South African towns at from 36 to 54 cents per pound, notwithstanding the fact that good crops are readily produced there. Butter often sells at such prices in this country, but never honey.

Since honey contains but little waste, it can be eaten in moderate quantities with much less tax on the eliminating organs than most other foods. Dr. Imfeld, of Geneva, Switzerland, has been quoted as saying: "If people would eat more honey, we doctors would starve." It is up to the beekeepers to inform the public as to the true value of honey as food.

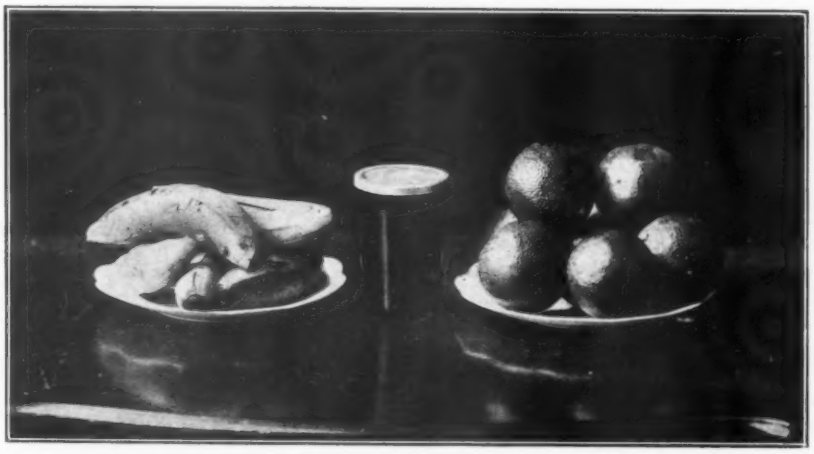

FIG. 3.—HONEY IS ONE OF THE CHEAPEST FOODS IN THE MARKET FOR ACTUAL NUTRITIVE VALUE

EDITORIAL COMMENTS

Shipping Bees by the Pound

While visiting in the province of Ontario, in the spring of 1914, the Editor ascertained that bees by the pound were imported into Canada on a large scale from the southern States. Mr. Chas. E. Hopper, of Toronto, was then receiving, for himself as well as for others, hundreds of packages. Evidently his experience as consignee and shipper of live bees at such long range must be of value, so we asked him to give us information. But he preferred to wait until he had a more extensive experience. He has now sent us a contribution upon this subject which will be found in another part of the Journal. It deserves attention from both shippers and purchasers of bees.

A thing worthy of note is the assertion that water is not needed in shipping bees that have no brood to nurse. This does not astonish us, for we determined years ago, while trying different methods in importing from Italy, that bees and queens, without water, arrived in better condition than those that were provided with water. There might be, however, conditions under which water would prove useful, cases of exposure to excessive heat with scanty ventilation.

But when colonies of bees are transported which have brood to nurse, water becomes indispensable. The more brood the hive contains the greater the requirements.

The shipping of bees, with queens, but without brood or combs, greatly lessens the danger of transmission of diseases.

Bees and Clover Fertilization

Bulletin No. 289 of the United States Department of Agriculture is before us. It is entitled "Red Clover Seed Production," by J. M. Westgate and H. S. Coe, and details the experiments made upon the fertilization of red-clover blossoms by Messrs. Wianco and Robbins of the Indiana Agricultural Experiment Station, and Messrs. Hughes, Pammel, and Martin of the Iowa Agricultural Experiment Station. It is out of the scope of our Journal to give a

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long account of the experiments there related. Suffice it to say that it is very interesting and that it practically confirms the experiments of Darwin, who said long ago: "One hundred heads of red clover, visited by bees, produced an average of 27 seeds per head while 100 heads protected from insects produced not a single seed." The average shown by these scientists is greater than that given by Darwin. They decide positively that although it is possible to have an occasional seed produced in clover from self pollination, clover is practically sterile unless pollen is carried to the blossom from a separate plant. Their observations show that bumblebees are able to pollinate 30 to 35 flowers in a single minute. They show also that the honeybee, when able to work upon the blossoms, is as efficient a cross-pollinator as the bumblebee.

One cannot read this bulletin without appreciating the thoroughness of these experiments. It is well worth perusing.

Expelling the Drones During a Crop

In the September number of the Swiss "Bulletin D'Apiculture," Mr. August Cordey reports the bees as driving the drones away in July during a honey crop. But he noticed that the colonies of black bees were driving away the Italian drones while the Italian colonies were driving away the black drones. He concludes that although the bees tolerate the drones from other hives at times, they may expel these (the intruders) when they do not expel their own. This, we believe, is the first time that any one has noticed or tried to establish a difference in the behavior of the bees towards the home-raised drones and the stray ones. We have always thought that they were either tolerated or expelled alike, whether home-bred or intruders.

Beekeeping in Porto Rico.—Our readers will be interested in the view of the apiary of Mr. Rodulfo Del Valle, of Ponce, Porto Rico, also with a photograph of the coffee-plant nursery, which we give herewith.

We have already given a view of the plantation in which one of the apiaries is situated. This will be found on page 405 of the December, 1914, number of the Bee Journal.

One photograph illustrates one of the improvements now being made in Porto Rico. It is a public road now being built in the mountain and leading to the district where the plantation is located. The third man from the left, holding the umbrella is our correspondent, Mr. Del Valle.

Teaching Beekeeping to Convicts

The following communication is interesting on account of the novelty of the experiment it mentions and also because the possibilities of reform and education among these unfortunates are certainly to be enhanced by outdoor pursuits. Nothing, in the opinion of reformers, will achieve greater success than the present tendency to treat convicts in a humane way, teaching them instead of punishing them.

The writer of this letter is a man of international fame. The "Wernicke" book-cases are known the world over. An article on wintering by Mr. Wernicke will be found among the contributions in this number.

It may be of interest to know that the Michigan State Prison at Jackson, with which institution I am associated as president of the Board of Control, has established three apiaries as a prison industry consisting of 50 colonies each, and will include a course in bee-culture as a part of its educational curriculum. The institution is conducting the greatest possible variety of primary industries, including the cultivation of nearly 3000 acres of land, which has proven so beneficial to the moral and physical development of the inmates that the Board of Control is contemplating the purchase of still more land.

The underlying considerations for establishment of apiaries are the possibilities for reformation, education and profit. These apiaries have only recently been established and I am unable as yet to report any success except that a very hopeful interest has been aroused not only among the inmates but among the officers of the institution.

O. H. L. WERNICKE.

Grand Rapids, Mich., Oct. 16.

Dr. Phillips' Book

Dr. Phillips' new book, "Beekeeping," has been read through with tense interest. The author's clear style and the clear type in which it is presented make the book easy reading, all but the five chapters which tell about the inside make-up of a bee. That part is hard for me because I know so little about it. I suspect that in many a case the pages of those chapters will remain the cleanest in the book, because the reader prefers to pass on to something of immediate interest in the production of big crops of honey, without caring to know all about the epimeral paraptera or the gonapophysis. Yet I would strongly advise the beginner not to neglect this part of the book. Even if the knowledge thereby gained should make no difference in his crops—and I am none too sure of that—he will be a better rounded-out beekeeper, and will have a joy in the work that is denied to us who know little about such things.

Without attempting a review of the book, I may be allowed to make a few comments upon some things in it, more especially those in which there may be some difference of opinion.

REMOVAL OF THE DRONES.

Dr. Phillips says regarding the disappearance of the drones at the close of the honey flow: "The first indication of this exodus is to see them in numbers on the bottom-board, and soon workers will be seen leaving the entrance carrying the heavy drones, with the base of a wing grasped by the mandibles." I wonder how many beekeepers have ever seen drones thus carried. I confess I do not remember seeing it.

APIARY OF MR. RODULFO DEL VALLE, PONCE, PORTO RICO

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Yet as Dr. Phillips *has* seen it, it only shows that I am none too close an observer.

QUEENLESS COLONIES AND POLLEN.

On page 85, occurs this: "It is sometimes stated that pollen is gathered only when it is needed; but this is not true, for queenless colonies gather large quantities. The advice is occasionally given to watch the entrances of colonies in the spring to determine whether pollen is coming in, it being stated that queenless colonies may be detected by a lack of pollen gathering. This is not a safe criterion." But is there no basis whatever for the persistent belief that queenless colonies gather very little pollen? Perhaps the whole truth is something like this: When a colony becomes queenless, the bees keep right on gathering pollen just the same as if they had a queen, so that it is impossible by watching at the entrances to say whether a queen is present or not.

In a week or two after becoming queenless the colony will have no brood to feed, and pollen will accumulate, so that it is common to find such a colony with an unusual store of pollen. When this occurs there will be a let-up in the gathering, so that after a time queenlessness may be recognized by the fact that small pellets of pollen are carried in while other colonies have large ones.

NECTAR WASTED.

Estimates as to the amount of nectar now out of range of sufficient bees to gather it have varied greatly, some thinking only half is saved, others only a twentieth. "In all the country," says Dr. Phillips, "there are few places where too many bees are kept, and it is doubtless conservative to venture an estimate that ten times the present honey crop could be produced with profit." The thought might occur, "If ten times the present amount of honey should be harvested, the immense supply would bring down the price so that beekeepers could not live." But if the output should be increased tenfold it would be consumed—at some price—honey would become a staple article of food, and in the end there might be a steadier price no lower than at present.

STORAGE CELLS.

At page 47 this: "The cells used in storing honey are usually of the larger size while pollen is ordinarily stored in worker-cells. The storage cells are less regular, and as a rule slope upward at the outer end." That would give to one knowing nothing about bees the impression that only a small part of the honey is stored in worker-cells. Is it not by far the larger part?

DEVELOPMENT OF THE QUEEN.

On page 102, 16 days is given at the time for the development of the queen. In the first volume of the American Bee Journal, page 199, the Baron of Berlepsch says that experiments he had made "show that the opinion generally entertained, that the queens emerge between the 17th and 18th day after the eggs are laid, is correct." In the same volume, page 226, Dzierzon says: "Seventeen days from the laying of the egg seem to be sufficient for the perfect development of a queen, provided the temperature is suitable and equable, and the brooding regularly continued." A little later 16 days was given as the time from the egg to the perfect queen. This stood until Cowan gave the time as 15 days.

It is not likely that within threescore years the bees should shorten the time from a little more than 17 days to 15. The difference may be accounted for by the probable fact that most of the observations were made upon queens reared in nuclei or weak colonies. Experiments made a few years ago in strong colonies by the writer showed that 15 days is nearer the mark than 16.

PROPOLIS AND TRAVEL-STAIN.

We are told, page 126, "The 'travel-stain' frequently seen on comb-honey is propolis. Heddon showed some years ago that bees do not deposit it on smooth surfaces." According to that the term "travel-stain" is a misnomer, which is undoubtedly correct, for the discoloration is not done by the feet of the bees, as was at one time supposed, but by their mouths. But is it always propolis? You can get plenty of "travel-stain" on a section newly built by allowing it to face a black broodcomb, which looks as if the discoloration in that case is due to bits of the black comb being carried over to the section.

That bees do not deposit propolis on smooth surfaces is hardly true in this locality. I've seen oodles of propolis on the smooth surface of a section, and I think also on glass.

BEES FINDING A MOVED HIVE.

"If the hive has been moved only a short distance they may soon find it by searching, but if it is moved several feet they may fail to find it." Page 178. That depends. When I had only one colony I moved it a rod and the bees found it readily. If I move a hive three feet in my present apiary, the bees are not likely to find it. In the first case they could not enter the wrong hive, as there was no other hive, and the bees would likely have found it if it had been moved three rods, but when other hives are on all sides the bees cannot distinguish, and will enter the hive nearest the old location.

HONEY BEST FOOD FOR BEES.

On page 241, Dr. Phillips says: "Beekeepers usually feel that it is cheaper to feed sugar syrup because of the higher market value of honey, but no food for bees better than honey has yet been found." Thanks to Dr. Phillips for that last statement, which might well have been put in Italics. To be sure, there may be exceptional cases, when the honey is objectionable, but good honey contains elements not to be found in sugar, especially the mineral elements, making it far superior to sugar for either man or bee.

BROOD-REARING BEFORE FLOW.

"If there are long intervals between honey-flows, the beekeeper must see that brood-rearing is at its best during a period of six or eight weeks before each flow." Page 263. If we count three weeks from the egg to the emerging worker, and 16 days more before going afield, that makes only two days more than five weeks; so six or eight weeks seems a bit long. But it may be none too long to begin the feeding, for the response by way of laying is not likely to be immediate, and it does no harm to be a little ahead. C. C. M.

MISCELLANEOUS NEWS ITEMS

Bees at the Minnesota Fair.—The beekeepers of Minnesota are setting an example to the world in their display of industry at the fair. This example is worth following by other States. The former president of the Minnesota Beekeepers' Association, Mr. P. J. Doll, sends us the following short statement concerning their apiary building:

We have an independent Apiary Department, a building about 70 by 140 feet, all for ourselves in which we have nothing but honey, bees and bee-supplies, and which was crowded for room.

All honey displayed for premiums was in glass cases; $1168 was offered for premiums on honey, beeswax, and bees this year. Leading beekeepers of the State shipped in enough honey so we could keep an 8-frame honey-extractor running all the time, six days in the week. Besides the $1168 in premiums, the Fair Board has allowed more than $500 for other expenses in the way of extracting and demonstrating honey and bees. The Fair Board expressed themselves on a number of occasions as being very much pleased with our showing.

Our Bee and Honey Department was made big by the members all working together in harmony and for the good of the whole. P. J. DOLL.

New York State Convention.—The New York State Association of Beekeepers' Societies will hold their annual convention on Dec. 7 and 8 in the Court House in Syracuse. This being a fairly good year in this State for honey, we expect a good attendance and a very pleasant and profitable meeting.

Be one of the crowd at Syracuse Dec. 7 and 8. IRVING KINYON, *Sec.*

Iowa Convention.—In our November number we published the program of the Iowa convention, which will be held at Des Moines Dec. 13, 14 and 15

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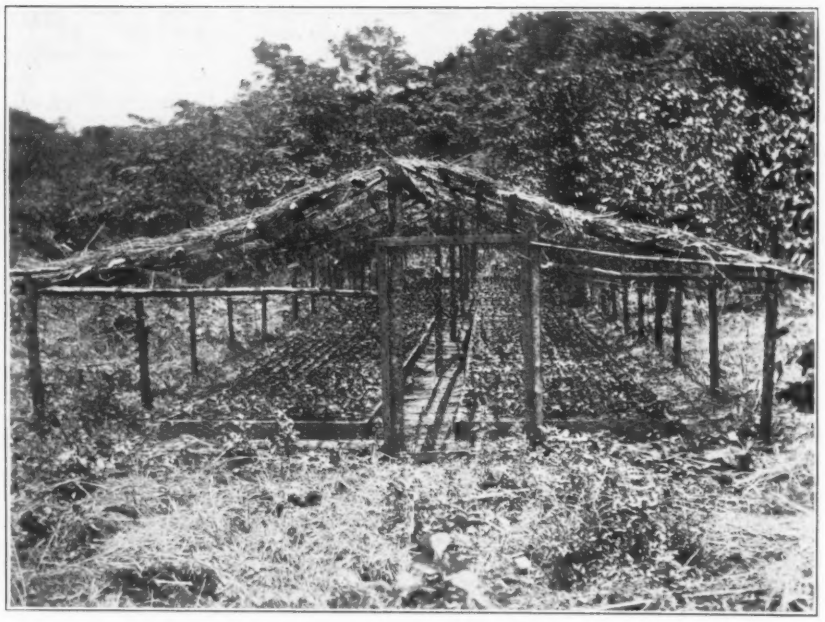


A COFFEE-PLANT NURSERY

but we failed to state that the meeting will be held at the Commercial Club rooms, in the Shops Building. Iowa beekeepers should note the location to save difficulty in finding the place.

Wisconsin Convention.—The Wisconsin convention will be held at the State Capitol at Madison on Dec. 9 and 10.

PROGRAM.

THURSDAY, DECEMBER 9.

The business meeting and appointment of committees.

Ten minute talks by F. J. Wells, Milton; A. S. Linn, Stoughton; W. R. Abbott, Ft. Atkinson; Frank Wilcox, Mauston; and A. C. Allen, Portage.

Question Box.

"How and Why I Paint Foundation"—Ed Hassinger, Greenville.

AFTERNOON SESSION.

"Foulbrood in Wisconsin"—N. E. France, State Inspector, Platteville.

"Why Were Bees Crawling in Front of the Hives?"—F. Kittinger, Caledonia.

"Beekeeping at Agricultural Colleges"—L. V. France, St. Paul, Minn.

"Queen-Rearing at the Wisconsin College"—C. W. Aeppler, Madison.

"State Recognition of Beekeeping"—Dean Russell, Madison.

EVENING SESSION.

"Extracted Honey Production"—A. Swahn, Ellsworth.

"Farming with 100 Colonies of Bees"—A. Pathe, of Malone.

"Stereopticon Views of Wisconsin Beekeeping"—L. V. France.

"Comb Honey Production"—E. R. Root, of Medina, Ohio.

"Marketing Honey"—C. P. Dadant, Hamilton, Ill.

DECEMBER 10—MORNING SESSION.

"Selling Honey by Mail"—E. B. Rosa, of Monroe.

"Value of Young Queens"—N. E. France.

"Out-of-door Wintering"—Dr. E. F. Phillips, Washington, D. C.

"Wintering in Wisconsin"—Andrew Stevens, of Stockbridge.

In the afternoon those in attendance will visit the Agricultural College and apiary.

Western New York Meeting.—The annual meeting of the Western New York Honey Producers' Association will be held at the American Hotel, Akron, N. Y., Dec. 14, beginning at 10 o'clock. An interesting program is being prepared. As the question-box is usually well patronized, it is requested that those having questions to ask will please send them in now, so that the proper men will be assigned to answer them. We expect to have some very good talent present to answer almost anything pertaining to bees, honey, etc.

It is desired to have each beekeeper bring his favorite package of honey, as well as labels, with facts relating thereto. Bring the honey anyway if you cannot bring the facts, for if each one will do this we will have a genuine assortment of sizes and discuss the possibility of establishing a uniform size, as we should to thoroughly co-operate.

Any beekeeper who has any new or useful device or appliance is requested to bring same and show its merits, as this is what we come together for to exchange ideas and to learn something new if possible.

Every beekeeper is invited to attend, is welcome, and is expected to help us make this the most interesting meeting ever. WILLIAM F. VOLLMER, *Sec.*

Akron, N. Y., Nov. 13.

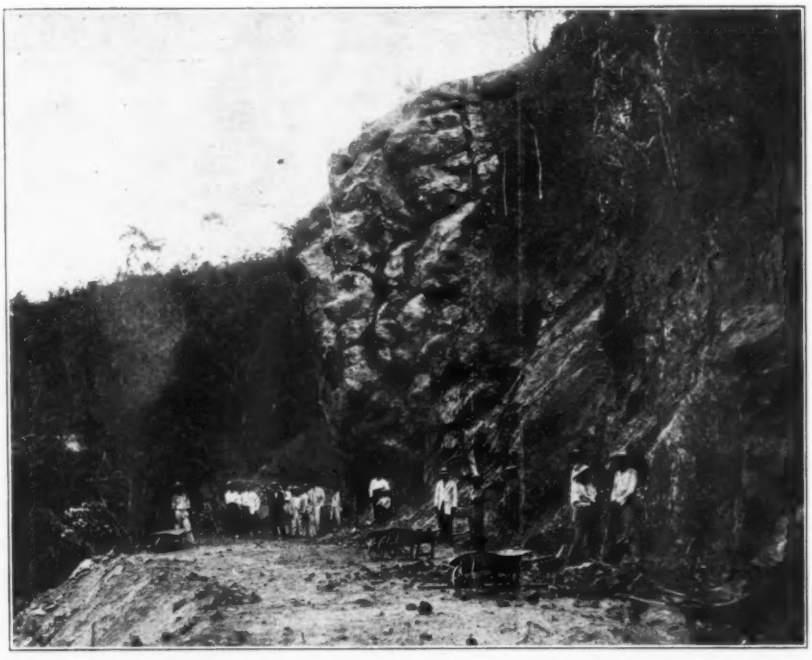
Seals for Honey Packages.—A certain firm that manufactures a corrugated fiber board box for shipping extracted honey have this interesting note:

"The resiliency of the material from which our boxes are made absorbs the shocks of transportation, and rough handling and the *seal prevents dishonest handlers from robbing the cans.*"

The emphasis is ours. In a recent shipment to the North, we found one entire 5-gallon can emptied, the contents all gone. As the cans used were all the single round cans, in stout wooden jackets, well braced and nailed, *no* damage was done to the *tin* of the can, but the screw cap must have been removed and the honey "extracted" a *second time!* Of course we have put in a claim, but claims are often unsatisfactory, *always* tedious. Who likes railroad claims anyhow? If the *seal* alluded to above will do the thing, let's have *all* our extracted honey retainers *sealed* for shipment. Why not a good idea.—E. G. B.—*Beekeepers' Review*

Eastern Massachusetts Society of Beekeepers.—The Eastern Massachusetts Society of Beekeepers will hold a meeting on the first Saturday of every month at 4 p.m., beginning with October and ceasing with April.

The speaker for December is Dr.



BUILDING A MOUNTAIN ROAD IN PORTO RICO

American Bee Journal

Burton N. Gates, who will speak on "Efficiency Among Beekeepers." The speakers for the other meetings: January, Mr. Allen Latham; February, Mr. S. S. Crossman; March, Mr. M. Lothrop Davenport, and for April Mr. F. E. Smith, Director of the Independent Agricultural School at Hawthorne.

BENJAMIN P. SANDS, *Sec.*
Boston, Mass., Nov. 15.

The Minnesota Beekeepers' Association will hold their annual convention on Tuesday and Wednesday, Dec. 7 and 8, 1915, at University Farm, Agricultural Chemistry Building, Room 251. The Tuesday evening meeting will be held in the Assembly Room of the Administration Building at 6:45 p.m. sharp.

TUESDAY FORENOON—9:00 A.M.

Social half hour. Business meeting.
"Report of Inspector of Apiaries"—Chas. D. Blaker.
"Treatment of American Foulbrood"—Prof. C. D. Siehl.
Discussion.

TUESDAY AFTERNOON—2:00 P.M.

Address—A. F. Woods, Dean of Minnesota Agricultural College.
"Beekeeping at the Minnesota Agricultural College"—Prof. Francis Jager.
"Report on Queen-Rearing at the Minnesota Agricultural College"—Prof. L. V. France.
"The Evolution of the Beehive"—Dr. L. D. Leonard and C. P. Dadant, Editor American Bee Journal, Hamilton, Ill.

TUESDAY EVENING—6:45 P.M.

Popular meeting with stereopticon views and motion pictures of certain phases of beekeeping—E. R. Root and Dr. E. F. Phillips and others from outside of the State.

WEDNESDAY FORENOON—9:00 A.M.

"Production of Comb and Extracted Honey in the Same Hive"—J. J. Kadletz, of Chatfield.
"Outdoor Wintering"—Dr. E. F. Phillips, In Charge of Bee-Culture Investigations, United States Department of Agriculture, Washington, D. C.
"Cellar Wintering"—E. R. Root, Editor of Gleanings in Bee Culture, Medina, Ohio.

WEDNESDAY AFTERNOON—2:00 P.M.

"Report of Bee and Honey Exhibits at the State Fair"—P. J. Doll, Superintendent.
"Production of Comb Honey"—Jos. Finstad, St. Paul.
"Production of Extracted Honey"—H. J. Gluen, Harmony.
"Spring Management"—L. F. Sampson, of Excelsior.
"Last Year's Experience with Bees"—E. F. Halden, of Mound.
Election of officers.

The Relief Fund.—The following contributions to the fund for relief of Louis Werner, of Edwardsville, Ill., who lost most of his property by flood, have been received to date:

R. G. Jordan, Chenoa, Ill.	$ 2.00
Walter C. Bennett, Frankfort, N. Y.	1.00
Frank Snyder, Cedar Rapids, Iowa.	1.13
R. B. Ross, Jr., Westmount, Quebec	2.00
A. Augenstein, Dakota, Ill.	1.00
Geo. M. Huntington, Bishop, Calif.	1.00
H. M. Debrodt, Hicksville, N. Y.	1.00
John G. Miller, Corpus Christi, Tex.	5.00
American Bee Journal	20.00

Acknowledgment.—Our thanks are due to the beekeepers in attendance at the Hamilton meet of Sept. 7, for an artistically framed photograph of that meeting, donated to the Dadant family. It is the same photo as represented on page 342-3 of the October number, but is of full size, 3 feet in length by 1 foot in height. The frame is hand-carved, finished in beautiful bronze, and as we understand was secured by subscription of the beekeepers present through the efforts of our old friend, Mr. N. E. France. It is now hanging in the editorial room of the American Bee Journal and we are very proud of it.

Kentucky Meeting.—We notice the announcement that the Kentucky State Beekeepers' Association will meet at Lexington during Farmers' Week, which starts Jan. 4. Several other associations will meet at the same time and a large attendance is expected.

Bee Meetings Fall in Succession.—According to the pre-arranged schedule announced in our July issue, most of the bee meetings of the middle States have been so arranged that they fall in succession. This will give an opportunity for some of the beekeepers to attend several meetings at a very nominal cost. Following is a list to date of the meetings as they will occur:

1. Kansas, Topeka, Dec. 1, 2.
2. Minnesota, University Farm, St. Paul, Dec. 7, 8.
3. Wisconsin, Madison, Dec. 9, 10.
4. Indiana, Indianapolis State House, Dec. 10, 11.
5. Iowa, Des Moines, Dec. 13, 14, 15.
6. Michigan, Grand Rapids, Dec. 15, 16.
7. Chicago - Northwestern, Chicago, Dec. 17, 18.
8. Missouri, Columbia, Jan. 3, 4.

Michigan to Celebrate.—The oldest State Beekeepers' Association, Michigan, will celebrate its 50th annual meeting on Dec. 15 and 16, at the Eagle Hotel, Grand Rapids.

This 50th meeting will be unique in many ways. The beekeepers will enjoy a banquet supper, the gift of Messrs. G. B. Lewis, of Watertown, Wis., and A. G. Woodman, Grand Rapids. This will be at 7:45 p.m. on the 15th, and a large number is expected to be present.

To commemorate the 50th anniversary meeting, the association is providing medals, as sweepstakes, for the best exhibits of bee-products. Three medals will be put up. A gold medal, subscribed for by the American bee-supply manufacturers; a silver medal, subscribed for by the Michigan jobbers in bee-supplies; and a bronze medal by the association. These medals will be for the three best exhibits, and must be won three times to become the property of the exhibitor.

The gold medal will be valued at $50 or higher, the silver medal $20, so that the exhibitors will have something worth striving for if they are successful in showing a winning exhibit. The medals will be hexagonal in shape and bear an appropriate design. As the competition is open to all members of the Michigan beekeepers' association, we shall be pleased to furnish full particulars of the classes to any beekeeper. Class premiums will also be given.

Besides the banquet and medals, there will be an excellent program, this will be international in character, and includes some of the best known men in the beekeeping world. A glance at the program will show the beekeepers that here is an opportunity to meet with these men that may not occur again for many years, and one that it would be a folly to miss.

The headquarters and place of meeting will be the Eagle Hotel. This hotel has been the headquarters of previous meetings, and is centrally located. It can be reached as follows:

From Lake Shore and New York depots take Butterworth and Monroe car to door. From Kalamazoo or Holland interurban, go half a block to Monroe avenue, then three blocks to Market avenue and hotel. From Muskegon interurban, alight at Monroe and Market avenues and walk half a block to hotel. From Union depot, hotel is three blocks north to Louis street, then two blocks west.

Rates are $1.00 and up per night, two in room $1.50 and up.

This year the Northern Michigan Beekeepers' Association are going to meet with us. The Northern members should note this and come down in a body. Write Ira D. Bartlett, East Jordan, for particulars.

The program, not quite complete, is as follows:

PROGRAM.

WEDNESDAY, DEC. 15.

Opening session 10:30 a.m.
Minutes of last meeting by the secretary-treasurer.
President's Address—Mr. David Running, Flint, Mich.
Report of the delegate to the National Convention at Denver, Colo.—Mr. F. Eric Millen, East Lansing.
1:00—Appointment of committees.
"Running Outyards for Extracted Honey"—Mr. E. D. Townsend, Northstar.
"Notes from the Year's Work"—Mr. Morley Pettit, Provincial Apiarist, Guelph, Ont.
"Size of the Brood-Chamber"—Mr. C. P. Dadant, Editor American Bee Journal, Hamilton, Ill.
"Phases of Queen-Breeding"—Prof. J. H. Haughey, Berrien Springs.
"Transferring Bees"—Mr. A. H. Guernsey, Ionia.
Question Box—Mr. C. F. Smith, Cheboygan.
7:45 p.m.—Banquet Supper—Gift by Messrs. G. B. Lewis, Watertown, Wis., and A. G. Woodman, Grand Rapids.
"Some Lessons of the Last Half Century"—Dr. E. F. Phillips, Washington, D. C.
"Beekeeping as a Prison Industry and its Reformative Influence"—Mr. O. H. L. Wernicke, Chairman of the Jackson State Prison Board of Control, Grand Rapids.

THURSDAY, DEC. 16—8:00 A.M.

Demonstration in Bottling Honey—Messrs. A. G. Woodman's Factory, 9:00 a.m.
Demonstration in Assembling Bee-Supplies—Messrs. A. G. Woodman Co.
"Business Principles and System a Big Asset in the Success of the Apiarist—Mr. Ira D. Bartlett, East Jordan.
"Which Should Beekeepers Produce, Extracted or Comb Honey?—Mr. E. R. Root, Editor Gleanings in Bee Culture, Medina, O.
"What an Inspector Sees"—Mr. F. Eric Millen.
Question Box—Mr. C. F. Smith.
Group Photograph.
1:00 p.m.—"Outdoor Wintering"—Dr. E. F. Phillips.
"Bee Business in Canada as Seen by a Trip Through Different Provinces"—Mr. Morley Pettit.
Reports of committees.
Awarding medals.
Election of officers.

F. ERIC MILLEN, *Sec.-Treas.*
East Lansing, Mich.

American Bee Journal

Wanted—Back Numbers of the Bee Journal.—We are in need of back numbers of the Bee Journal to supply requests for full sets. Our readers who have back numbers will confer a favor by writing us with full information as to the dates of all copies which they can supply and which they are willing to sell. Some especially needed immediately are listed in a classified advertisement in this number. When writing please give a list of what you have.

BEE-KEEPING FOR WOMEN

Conducted by MISS EMMA M. WILSON, Marengo, Ill.

Basswood Seedlings

On page 372, propagating basswoods is discussed, a subject in which women should be interested as much as men. There are practically no basswoods growing wild about Marengo, but we have a beautiful row of them growing on the place. Under this row thousands of seedlings come up every year from the seed that is bountifully produced. They never, however, appear the second year. They are not pastured down, and what becomes of them is a mystery. But there is a bountiful crop of fresh seedlings every year, so that the germination of the seed does not seem such a difficult thing. It is quite possible that the seed lies on or in the ground over a year, coming up the second spring after it has fallen.

If this supposition be correct, then it seems that the proper thing would be to plant the seed where it may lie in the ground over one summer. In many cases it would be undesirable to have the ground thus occupied, that is to have the seed planted where it is to remain permanently, and this might answer: In the fall, or as soon as the seed ripens and falls, gather it and bury it in the ground in a mass; then after having remained thus buried during two winters and a summer, it may be taken up in the spring and planted.

Canna seeds are difficult to start on account of their hard shell, and sometimes a hole is filed into each seed. Gladiolus cormels have a hard shell which is sometimes peeled off with scarce sorts. It would hardly be practicable either to file or to peel basswood seeds, although they might be lightly cracked; but another thing might be done with them that is practised with both canna seeds and gladiolus cormels, that is to pour boiling water upon them. This seems all the more plausible from what is said on page 369, about immersing sulla seed in boiling water for five minutes.

Fall Treatment of American Foulbrood

In an item on page 376, when speaking of the intended treatment of American foulbrood, it is said, "They are to be left until they have no longer any unsealed brood. Then their frames are to be taken from them (not burned) and replaced by combs of sealed honey, and that's all the treatment they are to have." How that "not burned" got there is a mystery. Did it so appear in the manuscript, or did the "intelligent compositor" take liberties with the copy? Anyhow, that "not" should be changed "to be" or something else to show that those frames were to be burned into a very burnt condition.

Now that the treatment has been applied, and is no longer a thing in prospect, it may be well to say particularly how it was done. Another hive was provided with combs of sealed honey—an abundant supply for winter and spring—and set in place of the old hive, the latter being of course set off the stand. On top of the yet beeless hive on the stand was placed an empty hive-body. The combs with adhering bees are now lifted one by one from the old hive, and the bees brushed into the empty hive-body upon the combs of honey. Very simple, yet just as safe as the usual plan of shaking while there is a full quota of brood in all stages in the hive. For there is no diseased honey in the hive, and what honey the bees have brought in their sacs will be all used up long before brood is again in the hive. The combs taken away are to be burned after the honey is extracted from them. With any considerable quantity it might pay to melt the combs and save the wax.

In this method of treatment, a method given by the late W. E. McEvoy, there is no hindrance to the work of the bees, while the usual shaking method is a serious setback. Of course there is the loss of the combs in either case. While it would not be advisable to delay treatment when a colony is found diseased early in the season, it would seem quite advisable to wait until there is no longer any brood in the hive when the disease is found late in the season.

Good as the plan is, it is not one of universal application. Mr. Le Sturgeon, of San Antonio, Tex., says that he has never found a time in the year when there was not at least a little brood in his hives. The plan is therefore barred from those far enough South to have no broodless period.

Bottom-Starters in Sections

Bottom-starters in sections, which originated "in this locality," seem to be growing constantly in favor, and as there is more or less misunderstanding about them, it may be well to give here some particulars. More than one otherwise good authority has advised to use bottom-starters ¼-inch deep. The conductor of this department has probably put in bottom-starters for a longer time than any other beekeeper aside from Dr. Miller, and does not hesitate to say that the one who advises so small a starter as ¼-inch is hardly speaking from much experience.

Foundation is probably fastened in sections most generally by the hot-plate machine, the one most commonly in use being the Daisy fastener. With this machine it is so difficult to put in so narrow a starter as to be well nigh impossible. A ⅜ starter is much more easily managed, but still very troublesome. With a ⅝ starter the work may be done very rapidly.

But the ease of putting in the starter is not the only thing to be considered. If it were, a 2-inch starter would be better than a smaller one, but a 2-inch starter would not do at all, for it would promptly topple over when given to the bees. Much experience has shown

ORANGE COUNTY EXHIBIT

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that ⅝ is about as great depth as may be used and have the starter stand up well.

But suppose the difficulty of putting in the smaller starter could be overcome, is there any objection to it otherwise? There is. The bees seem inclined to the notion that there should be a passage between the bottom-bar and the foundation, and if the bottom-starter is too narrow, and business is a little slack, they proceed to tear down a deeper starter. With a top-starter 3¼ inches deep and a ⅝ bottom-starter, and a section 4 inches deep in the clear, there should be between the two starters a space of ⅛ inch. In actual practice the space is likely to be a little more than that, because the hot plate melts away just a little of the edge of the foundation. When a section is given to the bees, they seem to make it their first business to fasten together the edges of the two starters, thus securing the lower starter against the danger of toppling over.

All this is with the understanding that thin super foundation is used. With extra-thin the result might be different, and for those who prefer extra-thin it might be best to use, at least for the lower starters, thin foundation.

CALIFORNIA BEE-KEEPING

Conducted by J. E. PLEASANTS, Orange, Calif.

No Wintering Problem in California

In California of course there is no wintering problem, as it is understood in the East. That is, there needs to be no preparation for guarding against extreme cold. But our winter is a period of comparative rest for the bees, though they may and do fly on all sunshiny days, unless hindered by a hard wind. We do not expect them to gather stores at this season. From Nov. 1 to Feb. 1 there is very little brood-rearing, and consequently there is less honey consumed than at any other period.

It is time now to lift your hives and see that none are too light to have sufficient food supplies, for, while the less the bees are disturbed now the the better, still they must not be neglected. If some are short of stores, I prefer to take a few frames of honey from a colony that is heavy and can well spare it to beginning to feed now. That is, where the apiary is known to be perfectly healthy. Of course, feed if need be, and any of the well-established methods of feeding will answer, though they will have their deficiencies.

Bee-feeding is not as yet a fine art, but there are many fairly good methods. When lifting your hives to test their weight, be sure and mark them on the front in some simple manner and keep a record so as to make your work systematic. If one becomes too weak, take off the super of emptv combs, which is here usually left over the brood-chamber, for they are better in closer quarters to conserve their warmth. Put your super over the super of a strong colony to save your combs. This leaving of the supers on is usually done here to preserve the empty combs, also in case of a late honey flow after extracting; the bees may need them. By a careful and simple system of marking, one is enabled to see at a glance the condition of the hive when last examined. All hives should be set a few inches above the ground to keep them away from the dampness in winter and spring.

A wooden frame for setting the hive on will answer, but where one has a permanent location it pays better by far to make a cement foundation for each hive. In the sage belt we are always in the hills; and where practical, the ideal setting for the apiary is a gentle slope with a southern exposure. With the extracting house in the foreground, this gives convenience in handling the honey, and the southern exposure gives early sun for the bees. Where the empty combs are left on, a good strong colony will keep them free from moths. The main thing is to guard against the presence of too much moisture in winter, as this causes mold in the outside combs of the brood-chamber. Should this occur, such combs should be removed and good combs put in their place. The moldy combs should be put in some dry place, as they can be saved usually for next season. Combs containing much pollen are most liable to mold.

Before hard winds occur in the fall, hives should be weighted with stones on covers to prevent their being blown off. This, however, is one of the most characteristic sights in a California apiary. Sometimes an inspector will find a 30 or 40 pound rock on a hive. This is a little more weight than necessary. But rocks are always handy and cost nothing; they keep things in shape in the outapiary which sometimes is not visited for weeks.

Attention should be given the hives, to see that they are in proper condition for winter, as a leaky or badly warped cover may cause a lot of trouble. It pays also to keep the hives well painted, in profit as well as in neatness of appearance.

One of the menaces of the mountain apiary is the little spotted skunk which is so numerous here. They do not need any "Eat Honey" stickers on their mail, as they already have the habit developed. They go to the front of a beehive and scratch, and some say tap on the hive with their tail to arouse the bees, catching and eating them, as they come out to see what is the matter. They frequent the hives near dusk in the evening and, unless something is done to diminish their numbers, do considerable damage, often weakening a colony so that it is easily robbed out. Perhaps the easiest and surest way of reaching them is to put a poisoned egg near the entrance of the hive in some small tin so that it cannot be overturned. The skunk is said to eat the bee for the honey contained in her honey-sac.

These suggestions and precautions are made especially for the beginner, and those of small experience, as of course all these details are but an old story to the experienced bee-man. But it cannot be too strongly impressed upon the beginner that the necessity of taking his bees through the winter in good condition means having them in proper shape to strengthen up for the honey flow in the spring, and that eternal vigilance is the price of success.

[The skunk is fond of all kinds of insects, and eats large quantities of grasshoppers, beetles, etc. It also eats honey readily if within reach.—ED.]

Our Exhibit

The Orange County Beekeepers' Club made a nice little exhibit at the Orange County Fair in October. Mr. George J. Brown, one of our youngest but most energetic members, was placed in charge, and the exhibit he made with the assistance of Messrs. Rails, Holbrook and Joplin, was a credit to any fair. He displayed an 8-frame Root reversible extractor run by an engine, and the practical manipulation of uncapping and extracting honey was shown to the public.

Mr. Rails, one of the queen breeders, had on exhibition a number of queens and nuclei which were of much interest, as were Mr. Brown's glass hives. The photograph shows the exhibit with Mr. Rails and the writer in the stand, Mr. Brown wielding the camera. Incidentally, Mr. Brown sold a carload of honey while running the exhibit.

BEE-KEEPING IN DIXIE

Conducted by J. J. WILDER, Cordele, Ga.

Near 4000 Colony Mark

The past season we came near reaching the 4000 colony mark. Notwithstanding we never made that mark our aim, but just planned for a moderate increase at most apiaries, while at a few we made heavy increase, as it was needed in order to bring the apiaries up to a profitable number.

We have never found it best to stop all increase, for we can actually make more honey at a 10 percent increase, and at the same time more easily keep

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down swarming. Besides we would hate to see the time when our business would be on a standstill, for we want to move it up at least some each season.

We did not produce as much honey this season as we usually do, yet our business was never in as good shape as it is at present; more honey on the hives for stores, and colonies stronger. Besides, this being one year for general requeening, we have headed over 2500 colonies with young queens from our good Caucasian stock. This means a great season for next year.

Supers Too Shallow

Comb-honey supers as sent out by our bee-supply manufacturers are not deep enough for the sections and the proper space above them. The covers rest too closely, and as a result, in removing them, the tops of a number of sections are at the same time removed, sticking fast to the cover, spoiling the supers of honey or sections. This is disgusting to the comb-honey producers, and of late they are making a great "kick." If they can't get deeper supers they will abandon comb-honey production or make their own superbodies, as many are now doing.

I do not know that this is true in the North, but it is generally true in the South. The white pine sent to this southern climate gradually shrinks, especially with hundreds of these in use, and all of them are too shallow. For a number of years I have had my comb-honey supers made ⅛-inch deeper than the factories make them, and even then in a season or so they have reduced in depth until they are too shallow, even painting does not overcome this shrinkage, and the only solution to this is a material that will stand this climate and will not shrink. For this purpose we have not found anything that is quite so good as well seasoned cypress lumber which can be obtained from any of the great cypress mills in the South.

[From our experience with lumber, we have found cypress to swell and shrink fully as much as white pine. We believe the heat of the southern skies must be responsible for some of this trouble. It is also probable that your bees use propolis more freely than ours during harvest. We would suggest trying a thin muslin over the sections, when a cover is to be used over the super. Of course it would not do if tiers of supers are used one above the other.—EDITOR.]

When Starters are Best in Sections

It is commonly recommended to use full sheets of foundation in sections, and this is good advice as a rule, but it is not always best, especially in the great cotton belt and in most sections along our coast country, where the honey in its best finished state is rarely thick enough in the extracted form because the bees store faster than they can evaporate in ready-built combs; while if they built the combs from a narrow starter the course of evaporation would be slower and more thorough, and the same source of nectar would give us a honey with a good thick body and milder flavor and no signs of fermenting or "weeping." Under this condition it is best to use only starters.

I visited an extensive beekeeper during the flow from cotton, who was producing comb honey in the regular shallow extracting supers, and I was a little surprised to find that he was only using very narrow starters in the frames, and he remarked, "I would not use full sheets of foundation during this flow if the foundation came free." For the sake of having some extracted honey he was using some old ready-built combs and a few supers at the home-yard, and had full sheets of foundation in the frames. The bees were drawing out the foundation and building comb at a very rapid rate. He remarked, as we examined them, that this was too much progress for a good article of honey from this source; while in the supers where starters were used, comb building was not near so rapid, and the honey was finished up in the frames "blunt."

After sampling the finished articles from the supers containing ready-built combs, full sheets of foundation and starters, the quality was found to be far superior in the latter. If the same honey stored in the ready-built combs is left on the hives until late in the season it may have a little heavier body than if extracted at the close of the flow, but there is not much improvement in the flavor. It will be some darker and taste a little sour; bubbles will be seen in the cells all through the honey as well as a great amount of bulged cappings, etc.

CANADIAN BEEDOM~

Conducted by J. L. BYER, Mt. Joy, Ontario.

The Season

The old-time saying that one extreme generally follows another, seems to be verified again in the matter of weather conditions in Ontario. After a very cool summer, much of the time very wet, we have for the past month been treated to beautiful weather with almost no frost to date—Nov. 10. Very little rain during this period of sunshine, but no harm is done as the precipitation was abnormally heavy earlier, and the land is still full of moisture; indeed, nothing will suffer if we get little rain this fall.

This fine weather has been ideal for late feeding or other postponed beework, and there can be no excuse for neglect in these lines. We certainly have had lots of time to do the work. Bees are going into winter quarters in fine condition, so with normal weather for the winter, good wintering should be assured.

Dr. Phillip's Book—Overproduction of Honey

According to an editorial on page 367, Dr. Phillips in his recently issued book on beekeeping, says that there is no present likelihood of overproduction of honey. While he no doubt refers to the United States, as conditions are in many ways identical in the United States as they are with us, no doubt I will be excused for taking liberties. Frankly, I believe that there are scores of beekeepers in the United States who will take issue with Dr. Phillips on this question, and I am positive that there are lots of beekeepers in Ontario who will do the same. Yes, I know the old time arguments of educating the people to eat more honey, to create more demand, etc., will be used again in answering such claims, but the older I get the more absurd it seems to me to boost the production of honey in advance of a profitable demand for the same.

When Mr. Achord, of Alabama, was at Toronto last September, we had the pleasure of a few moments' conversation with him (all too short by the way), and one of the few things I remember of the interview was the statement that he could not get more than 3½ cents per pound for good amber honey. From California comes the same lament, and judging by letters from other parts of the States, which I have received lately, many, many beekeepers think that there is quite enough honey being produced in the United States for present needs. Things are a little better in Canada at present (thanks to the unnatural law of protection), and yet we have certain boosters who would seemingly be glad to increase production so that the demand would certainly be below the available supply. Increase the *demand* for honey, the supply will take care of itself. Too long we have worked at the wrong end of the problem, and surely it requires but little logic to see the fallacy of such a procedure.

[While we do not think it profitable to continually bring the subject before our readers, we feel that Mr. Byers' conclusions need some comment on how to increase the demand.

It is very apparent to everybody that honey is not growing in use with the increase of population. As mentioned in our article on "Food Value of Honey", the use of honey was once almost universal. Now but a small portion of the people use it, and the proportion instead of growing larger is constanly growing smaller.

Butter has been kept before the public by the representatives of the dairy industry in agricultural colleges and

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elsewhere. Oleomargarine looks and tastes so much like butter that many people cannot tell the difference, yet it is little used. The reason is that its inferior qualities were brought to the attention of the public by these college representatives and other organizations who had the interest of the dairy industry at heart. As a result the public has formed a prejudice against it and refuses to accept a substitute for butter.

If there had been an apiary department in every agricultural college when substitutes began to be offered for honey, instead of a small percent of the population eating honey as now, 90 percent would demand it and refuse to be satisfied with a cheap and inferior substitute.

Our educational institutions today largely determine what our ways of thinking and habits of life will be tomorrow. Unless the honey-producing business has representatives at headquarters, our interests will not be kept before the public and the demand for our product will be supplied by those who are able to meet the changing conditions of our time.

It was the official representatives that called to public attention the inferiority of oleomargarine to butter and created a sentiment that refused to be satisfied with a substitute for the latter product. Had the same fight been made against substitutes for honey, the general public would not need be told that the cheap corn syrups are inferior to the product of the hive.

When the demand declines, for a product which is not only of the highest quality, but is at the same time one of the cheapest foods on the market, as analysis shows honey to be, it is time for the honey-producers to rub their eyes and wake up. The trouble is not a lack of demand, but because of lack of business methods on the part of the beekeeper, the demand is met with something else.—EDITOR.]

Dr. Phillips on Evolution

So Dr. Phillips believes in evolution page 368 of the American Bee Journal. Well, we would hardly expect anything else, for it would be almost "bad form" for a scientist to express any other belief. But for all that, some of us old-fashioned clodhoppers — the writer among them—will continue to believe that God gave man dominion over all the lower animal kingdom, the bees included, and firmly believe that the latter were exactly as they are now many thousands of years ago. One of the things always inexplicable to me has been the fact that none of Darwin's followers can tell us just when development of certain things ceased. But enough of this, the first thing I know I will stir up a hornet's-nest and be getting into all sorts of trouble.

American and European Foulbrood

Looking over the last number of the American Bee Journal I was impressed with the thought that no matter how much we would like to get away from the word "foulbrood," our old-time friend will not be downed. In this November issue we have leading articles on this subject from California, Colorado, Illinois, Vermont and New York—maybe I have overlooked some at that. Reading all this matter, two things impress themselves on our mind personally, and they are as follows:

We dread European foulbrood more than ever, and contrary to what Dr. Miller's sentiments seem to be, we have more or less contempt for American foulbrood. Perhaps the word "contempt" is ill chosen, but at any rate we do not dread this disease. Dr. Miller speaks of the latter disease as not traveling fast, instancing the fact that while they have just found it in their apiary, it has been known to be within 12 miles of Marengo four or five years ago. Why, it has been within at least four miles of my Cashel yard for ten years or more, and never was a case discovered there. At other yards we have found one or two isolated cases every year or two, and yet we have never had any outbreak. Could we have said the same of European foulbrood under like circumstances?

Of course American foulbrood requires prompt and radical treatment, but there is the satisfaction of *knowing* that the disease is only transmitted by robbing or in some other way of mixing combs of honey from infected colonies to healthy ones, on the part of the beekeepers.

What we *know* about the other type of the disease is mostly of a negative quantity and quality seemingly, for after Dr. Miller's encouraging reports it gives one a chill to read what Wesley Foster says. Truly, we have much to learn about European foulbrood yet, and I frankly confess that I would rather find half a dozen cases of American foulbrood in each of our several yards next spring than to find a single colony affected with European foulbrood.

The Great Clay Belt of Ontario

That picture of a northern apiary near Haileybury, Ont., revives my old notion of thinking that we would like to have a lot of bees in that country. A number of years ago a trip was made up there, and I well remember the thousands and thousands of acres covered with willow-herb and smaller areas of alsike, white clover, raspberry, etc. This locality is what is known as the great clay belt of Ontario, and is about 400 miles north of Toronto. The apiary we often refer to as our north yard, is but 100 miles north of that city, so we are really in the south of Ontario when the vastness of the province is taken into consideration.

CONTRIBUTED ARTICLES

Bees at Washington Fair

BY J. W. WARE.

WHEN first we came to western Washington, beekeeping was hardly known as an industry. An agricultural fair had been established, and looking over the premium list we found listed one pound of honey and one pound of beeswax with a cash prize of 25 cents each. This did not look good, so we arranged a one-frame glass hive and made a display from the top of a dry goods box. This attracted much attention, and was the means of starting a bee department at the fair, which was given an 8 by 10 shack to start with. This was filled, and each succeeding season we enlarged the exhibits until we now fill a 75 foot building.

We feel a great deal of pride in the success we have attained. That one-frame observation hive proved from the start that live bees are an attraction. We have kept it going until we now have from six to eight one-frame and from two to three full glass hives, and two to six full colonies competing. One or more demonstrations given each day at 4 p.m. have proved to be one of the very best leaders at the fair. The demonstrations consist of opening a full hive, finding and exhibiting queen on comb, and queen clipping contests. The performances are given in the open to interested crowds without protection of any kind.

The bees give no bother, as they are baptized with warm water about 20 minutes before time to open, though if kept closed up for three days they are so conditioned that they need but little of "John the Baptist." Our honey exhibits are the best ever, so say the visitors.

All this costs time and effort, for which we are paid by the pleasure we get out of a first-class show. This past season has been one of the very poorest we have experienced on this coast.

Puyallup, Wash.

A Winter-Case for 20 Cents

BY ED SWENSEN.

I AM sending three photographs of my winter-cases. Number 1 shows the hive in place, and the space for packing, which is about 6 inches, on top. Number 2 shows the case with cover on, as it looks when packed for winter. Number 3 shows 34 colonies

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packed for winter. I might add that they are also packed for spring, as it is just as necessary to have them protected in the spring as in the winter.

My bees were gathering pollen today (Nov. 11, 1914), which I don't think they would have done if they had not been packed, as the nights are so cold that where they were left without winter-cases it took the bees about all day to warm up so they would come out. Not so with the ones packed; they were out just as soon as it warmed up enough so the bees could fly. I use planer shavings for packing. I generally put some forest leaves in first, so in case there would be some openings around the bottom the shavings wouldn't leak out. I buy boxes at the grocery store for 10 cents apiece (cover and all). They are just the right size the way they are. I cover this with one-ply roofing. These covers I shall use as a shade-board in the summer, as they are plenty large for that purpose. These boxes cost me finished about 20 cents, not figuring labor.

Spring Valley, Minn.

FIG. 2.—SWENSEN'S 20-CENT PACKING CASE COMPLETE

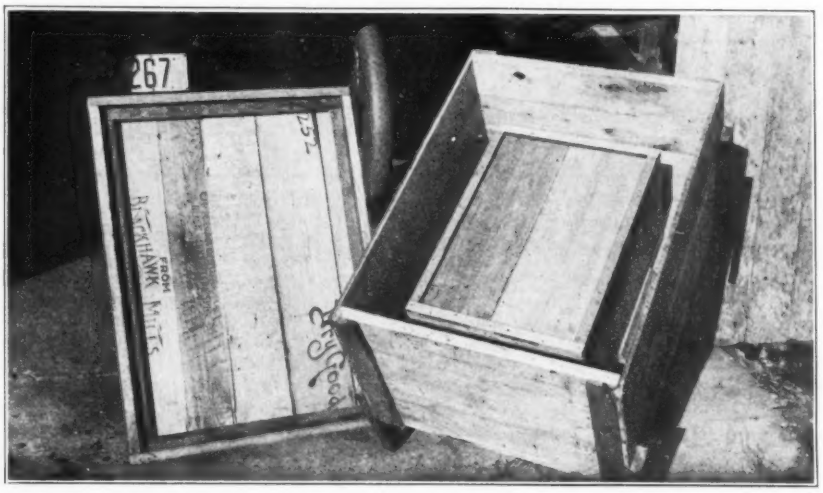

FIG. 1.—WINTER CASE USED BY ED SWENSEN, OF SPRING VALLEY, MINN.

Outdoor Wintering in Northern States

O. H. L. WERNICKE.

The art of wintering bees successfully presents problems involving all the other problems relating to the industry, for unless the bees are successfully wintered, all other work of the apiarist is useless.

Among northern beekeepers cellar wintering is generally regarded as the safer and better method. Double-walled hives and other forms of outdoor protection have their numerous advocates and are employed with varying results according to local conditions and the degree of care and intelligence exercised by the beekeeper.

That bees do freeze cannot be disputed, but it is equally true that winter losses are often due to other causes than cold. Aside from insufficient stores, bad air and the consequences of long confinement are responsible for more failures than cold. It is astonishing how bees will resist long periods of intense cold when the supplies of food and good air are not wanting. Of equal importance to the food supply is its accessibility, for, unless the bees can avail themselves of the food, it might as well be absent.

When bees go into winter condition they cluster; it is their method of keeping warm. The cluster usually forms below their stores near the forward center of the hive and moves upwards as they consume their food supply. If the cluster were started at the top, the lower stores would be in a colder zone and not available; the bees would then die of cold induced by starvation—close to a plentiful food supply.

It may be safely assumed that a strong colony is quite capable of generating sufficient warmth for its own preservation under almost any condition of outer temperature, if it is not allowed to escape too freely. An unprotected boiler—exposed to winter winds and cold—requires a much greater fuel consumption to maintain a given steam pressure than if properly covered with a good insulating material. Losses by radiation are a waste at the expense of fuel and energy, and in a colony of bees such needless losses not only require the greater consumption of stores, but also a far greater physical activity on the part of the bees, which takes their vitality and shortens their lives. It is clear then that the main problem when wintering bees out-of-doors is to conserve the warmth which they generate. Whether this result be obtained in a cellar or by any other form of protection matters little, the question resolves itself into one of adequate insulation to prevent the too rapid loss of the natural warmth which the bees themselves supply.

It is a well known principle that the closer the insulating agent is brought into contact with the source of heat the more effective it becomes. It requires fewer heat units to maintain a given temperature in one cubic foot of space than in two.

When preparing bees for the winter, a matter of prime importance is the provision of ample space for dead bees and circulation of air below the frames. Two inches is none too much; less than one inch is positively inadequate. The hive openings should be not less than five square inches in area, and more is preferable.

Most beekeepers understand that hives for outdoor wintering should be provided with ample top covering of some absorbent material, chaff, straw, excelsior, shavings, leaves, old quilts, carpets or the like; use too much rather than too little.

The successful wintering of bees depends upon adequate insulation to conserve the heat which they produce, an accessible supply of food, good air, and absence of moisture. When these conditions are insured, bees may be wintered out-of-doors as well and often better than in a cellar. Such colonies build up earlier in the spring and produce more surplus honey than after cellar wintering; the cleansing flights are a big factor in preserving the health and vigor of the bees.

The writer's own preference favors the 8-frame 2-story hive because the food stores and brood areas are greater and less spread out. The form of this hive with its greater bulk of stores above the cluster more closely approximates the bee-tree; it also brings the stores more closely into the zone through which the cluster moves upwards and therefore more accessible. During the cold weather the bees will not go far from the cluster for food, as they would become chilled. The food stored at the sides is often too cold to be secured.

The high insulating value of paper is well known, but not generally appreciated. We all know how paper-lined clothing protects against wind and cold. It does this by keeping the heat in; for if we do not let the heat out the cold can't come in. It's the same with a colony of bees.

To prepare a colony for outside wintering, the bottom-board or stand should be banked sufficiently to prevent drafts under the hive; then see that the opening and the space below the frames is adequate.

An empty hive-body with a piece of carpet or burlap stretched over one opening and tacked to the outside and well filled with chaff, straw or the like makes a splendid cover.

Another method is to fix a queen-excluding board to this hive-body in place of carpet or burlap. This may be done by using ordinary hive staples. When the excluder-board is used it should be covered with a cloth to pre-

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vent fine particles of the chaff or other material from sifting on to the combs. The writer prefers to use cloth, burlap or old carpet, both over and under the chaff, with edges tucked in between hive-walls and chaff; this makes a neat job.

There should also be room between the top of the frames and this cover, for the bees to cross over from one comb to another. When cold, they will not readily go downwards to get on the other side after food, but will do so when top cross-overs are provided. When the carpet or burlap is placed next to the comb frames, a couple of 5-16 or ⅜ inch sticks laid crosswise of the frames will insure against cutting off the beeway, which may occur from sagging of the material.

Having made the top and bottom of the hive shipshape, cover the outside with building paper, strawboard or the like; this will not cost more than a few cents per hive and may be used year after year. This paper covering should be of good thickness, one-quarter inch is good, but a half-inch is better; this can be tied or tacked on to the hive-body. Vents between the paper and the hive-body are to be avoided.

Black building paper draws the sun's rays and is objectionable; a coat of light colored paint over the paper cures this defect and also prevents soaking from snow and rain. Almost any kind of strong paper may be used for the outer covering if given a coat or two of paint to make it sufficiently waterproof. Old newspapers folded and tacked or tied on to the hives, when covered with stronger paper, afford splendid protection.

These methods of protection are also recommended when bees are wintered in sheds or other non-heated buildings above ground. In such cases less paper insulation is required; the painting process and cover boards may also be omitted.

By carefully observing the important factors herein referred to, bees may be safely wintered outdoors because they will at all times be able to maintain sufficient temperatures for their comfort and health without excessive consumption of food or harmful physical activity no matter how low the mercury drops, and for the same reason the amount of food required is no greater than if wintered in a cellar.

The writer has successfully wintered bees year after year in single-walled hives stored in single board sheds in Wisconsin, where the thermometer registered 20 degrees Fahr. below zero for days at a time, and these colonies were stronger and better producers than those wintered in the cellar.

When experience proves beyond doubt that cellar wintering may be safely dispensed with, it will remove one of the bug-a-boos of northern beekeepers, and should result in a greater stimulus to apiculture in the northern States.

Grand Rapids, Mich.

Comb Honey Production Without the Use of Separators

BY ALLEN LATHAM.

ON page 187 Dr. Miller asks: "How does he do it?" and I have promised to tell how I do it. All beekeepers know how fast time goes with us, and that will explain why I have been so long answering that question.

It is perfectly simple and easy to produce good section honey without the use of separators, but to do so one must take certain precautions. First of all, he must have his hives level, perfectly level from side to side and preferably level from front to back. Personally I consider it a mistake on the part of many beekeepers to slant their hives to the front, especially when this slant involves supers also. It must be obvious to every one that, if the bottom-board slants, then no other part need slant. It is clear that with tilted hives the bees will not build marketable section honey, for the combs will be swung out of the sections since the bees build them vertically.

One cannot produce uniform sections without separators unless he keeps his colonies strong. Work must be started throughout the super at once, or at least not be so slow in spreading that sections can get well under way before adjacent ones are started. If this precaution is not followed, then each older section will bulge into the adjacent younger. This does not necessarily mean unmarketable honey, but it will mean a less uniform product, and one which has to be handled with more care. If, however, the sections are uniformly begun, the combs will meet midway.

APIARY OF R. H. SCHMIDT, OF SHEBOYGAN, WIS., IN WINTER PACKING CASES

FIG. 3.—SWENSEN'S BEES IN THEIR WINTER CASES

The next requisite is the secure fastening of the full sheet of foundation to the sides of the section. If this is not done the foundation will warp, for almost invariably the bees get one side started before the other, and this causes the sides or rather edges to curl. This curling will frequently mean that the edges of the comb run into the adjacent section though the center is all right. If one does not care to fasten foundation thus, he must use only starters and not full sheets. Starters will produce excellent results in the production of section honey without separators. I need not here, though, dwell upon the disadvantages in the use of starters only.

It is not difficult, after one gets used to the process, to put in full sheets fastened to top and sides. It is but little slower than the hot plate method

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of fastening the top only.

Dr. Miller surmises that the 4 bee-way section may have something to do with the result. It does. I have produced thousands of sections of non-separatored honey with two-bee-way sections, but they offer one serious defect. When supers are crowded, the comb of one section will often overlap slightly the crack between the two sections. It will thus get sealed partly against the other section, and when the two are taken apart there is more or less daub. It is no worse than what many times happens with the use of fence separators. We all know how the fences are frequently attached to the combs and result in dauby sections. I love honey, but my love quickly turns to hate when that honey gets on my fingers or clothes. With a beeway at the side the bees will rarely carry the comb beyond and fasten it to the next section.

I have just been cleaning up over 2000 sections, and in all that number found but two cases where that had actually happened. In some way a sheet of foundation was dislodged and fell out of the super. The bees simply extended the two adjacent combs into that empty section, and did fasten them slightly to the middle section, so slightly that they scarcely leaked when pulled apart. Bees, especially Italians, like to keep passage-ways open. Hence, the side beeway is a great deterrent to bulging sections.

This article is intended to answer the question, and should properly be restricted to an answer. I find, however, that I have to supplement my answer with explanation and possibly defence of the method. At first I disliked the idea of handling sections with four openings. But it is like everything else, when one gets used to a thing he finds that much of his apprehension was ill founded. I have not taken exact data, but I am beginning to think that I can clean up a super of four-bee-way sections more quickly than I can the other sort. This is especially true if there is little glue. The sections have so little contact that they get better compressed than do the other sections, and hence there is less filling up of cracks by the bees. But if there is lots of glue it is harder to get a good result than with the plain section.

There are two tremendous arguments in favor of the production of honey by this method. One can get more honey with the same labor and the same bees. The product is more kindly accepted by the public. Since it is possible to produce a good article by this method, and since the desirability of such method is great, I ask for an honest consideration of the method and a fair trial before it is condemned.

Norwichtown, Conn.

No. 11.—The Honey-Producing Plants

BY FRANK C. PELLETT.

(Photographs by the author.)

THE Indian-currant, also known as coral-berry or buckbrush, *Symphoricarpos orbiculatus*, is a widely distributed shrub that furnishes considerable nectar in late summer. It may be found in woodland borders and open forests from New York, west to the Dakotas, south to Missouri and Arkansas, and from New Jersey south along the mountains to Georgia and Alabama.

The blossoms are very small and inconspicuous, Fig. 58, but where the plant is abundant it is much sought by the bees. In southeastern Iowa, the season of 1914 was a very poor one for the bees, and many colonies required feeding to get them through the winter. In a few localities where buckbrush abounds they not only were well prepared for winter, but stored some surplus. The blooming season is July and August in most northern States, so that the clover harvest is usually nearly over when it comes on. Figure 59 shows the bunches of red berries that hang on the bushes after the leaves have withered and dropped, and which will be instantly recognized by any one familiar with the plant. These berries are often about the only winter food available for small birds when the ground is covered with snow.

FIG. 58.—INDIAN CURRANT IN BLOOM

FIG. 59.—BERRIES OF INDIAN CURRANT OR CORAL BERRY.

SPANISH-NEEDLES.

The Spanish-needles, also known as bootjacks, beggar-ticks, stick-tights, and marigolds, *Bidens*, are very widely distributed plants, and are of interest to the beekeepers from Nova Scotia to

FIG. 60.—SPANISH-NEEDLE IN BLOOM

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California. Most of the species are weeds growing most commonly on low or swampy lands. Not all of them produce honey in appreciable quantity, and possibly some of them are not sought by the bees at all. Figure 60 shows *Bidens aristosa*, which has an attractive yellow flower and is most frequently mentioned as a source of honey. This is particularly valuable on the lowlands along the Mississippi and Missouri rivers. During the past season (1915) much honey has been gathered from it.

Two species are reported among the honey-plants of California by Richter, *B. frondosa* and *B. pilosa*. The former is one of the most widely distributed species and closely resembles the one shown in Fig. 61, but has a wider leaf. *Frondosa* is seldom reported as yielding nectar, and it is of doubtful value to the beekeeper.

Figure 61 shows the western bur marigold *B. involucrata*, which occurs from Illinois and Iowa south to Texas and Louisiana. This is reported as a good honey-plant. This flower has no colored corolla, but is surrounded by greenish rays. August is the month of flowering with this species. The Spanish-needles are all late bloomers, and where they yield nectar add something to the fall honey flow.

Atlantic, Iowa.

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Shipping Bees in Pound Lots

BY CHARLES E. HOPPER.

THE plan of shipping bees in combless packages in early spring is making great headway in Ontario and in Canada generally, in fact. For a number of years we have been buying bees in this way, not only for our own use but for other beekeepers as well. This system is so much in advance of the old method of shipping bees on the combs, that we have decided to tell the readers of the American Bee Journal just how we operate, and why it is superior to the old methods.

In the North, a colony of bees is not in condition to spare either bees or brood much before May 25, hence, generally speaking, it is impossible to make any increase that will give a good return in white honey. A pound of bees placed on two drawn combs will, here in Ontario, equal, and in some cases, surpass a 3-frame nucleus, if it is started a little before fruit bloom.

During the season just past we shipped out nearly 400 pound packages of bees and about 75 3-pound nuclei. A considerable number of our customers bought both packages and nuclei because, as they frankly said, they were doubtful about the packages making good. To each of this class we addressed a letter asking to report to us at the end of the season their observations on the relative merits of the two systems.

Out of 17 letters received, up-to-date, 16 of them have reported "decidedly in favor of the pound package." Why? The 3-frame nuclei received from the South early in the spring, May 1, got a severe set-back, and in many cases stopped operations entirely until all the brood had emerged, then commenced slowly again, or, on the other hand, forged ahead so rapidly (we think weather conditions and apiary situations explain these contrary reports), that they either swarmed or prepared to swarm and sulked, which is just as bad, so that the total white honey crop was considerably less than it would have been had they just at the exact time reached their maximum producing capacity.

The pound packages came along slowly at first, but under the stimulus of fruit bloom and natural efforts reached their best at the time of the main flow, and held together with no thought of swarming, and in the end piled up a bigger surplus than the colonies built up from the 3-frame nuclei.

These reports are from all over Canada excepting British Columbia. Two reports came from Nova Scotia, two from New Brunswick, five from Quebec, one each from Manitoba and Saskatchewan, and the remainder from widely different points in Ontario. In addition to these written reports, we have received very flattering personal testimonials as to the value of the pound package system.

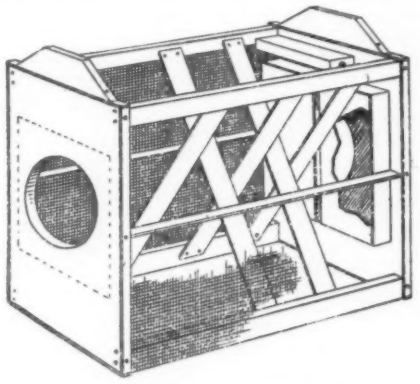
PACKING AND SHIPPING.

Our experience, covering five seasons, goes to show that there are some breeders and shippers who advertise very extensively, but are not able to deliver the bees in a satisfactory condition. The shipper must be not only a reliable, competent, trustworthy breeder, but what is of more importance in the pound package trade, one who knows how to put up the bees properly without losing a quarter of those in each package in transit, and has a thorough knowledge of the express business from the standpoint of tariff rates and proper routing of shipments.

FIG. 61.—BUR MARIGOLD

KIND OF PACKAGES.

The package itself is important. It must be made so that on arrival at the apiary the bees can be easily removed therefrom. We find that if the queen is caged inside of the package (not on the outside) there is less loss of queens on arrival. Some breeders ship with



THE MODERN WAY OF SHIPPING BEES

the queen at liberty among her subjects. While not prepared to condemn it outright, we prefer the other way for various reasons.

We find that the packages are usually made too heavy. This is a big item in a long shipment. There is a patented package now out that is just about right for size, weight and strength.

WATER NOT NECESSARY.

We do not think water necessary in shipping bees in combless packages. For some time we were in doubt about this point, but after receiving pound after pound during the hot season, we have come to the conclusion that water does not add any advantage to the package. In this we have had ample proof, as on the same train from the South we have received bees in both types of package and could detect no difference.

AN EARLY START NECESSARY.

If one would get the best results from the pound package, the bees should be received and put on the combs several weeks before fruit bloom. This gets them established nicely, and when the bloom opens up they forge right ahead.

We have received some very flattering reports during the past season. One lady reports 150 pounds of white honey, and she did not receive her bees until the middle of fruit bloom. As an investment, we believe it a paying one. There is scarcely any swarming during the season, and the whole force holds together much better than an old established stock. The bees seem to feel that they are still "juniors," and consequently work much harder than a colony that has come through the winter here in the North

THE ADVANTAGES OF THE SYSTEM.

Almost all beekeepers want to know just what advantage lies in any new system offered. The advantages are many. 1st. An early start can be made if increase is desired. 2d. Help can be given very early to weak colonies. 3d. The cost of getting a plant under way

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is small compared with purchasing full colonies. 4th. The express rates are very moderate. (It costs 22 cents per pound to send bees to Toronto from Alabama, if sent in 50 pound lots). 5th, but most important of all, it is simply impossible to transmit disease by this method if properly made candy is used.

We believe in the pound package. Indeed, we hope we will soon see the end of shipping bees on combs. If the pound package is purchased early enough, it is a much safer investment than a full colony of bees with all the risks of disease.

In closing this article we quote from a private letter received from an apiary inspector, a man full of years of experience: "This plan of shipping bees in combless packages deserves every support. I feel satisfied that in time it will go a long way towards eliminating the spread of diseases, which, in spite of our best efforts, is slowly on the increase."

Toronto, Ont.

Importing Bees into England—A War-Time Experiment

BY A. H. BOWEN.

I AM sending a photograph of 15 colonies of pure Dutch bees on their arrival at an English country station after a six days' journey from Amsterdam to London dock.

Importing bees in war-time is rather a risky and expensive operation. The freight and railway charges are heavy, and each consignment must be accompanied by a certificate of origin signed by the British Consul to show that the shipment is perfectly genuine, from a neutral country.

However, I was anxious for an extension of apiaries; and, further, of an opportunity of thoroughly testing the supposed disease-resistant qualities of pure Dutch bees. Apart from the last consignment of 21 colonies, of which 11 were utterly smashed, and the bees all drowned in their own honey—the bees came through in good order. Each box held six frames, and the covers were screened with wire cloth to allow of ample ventilation. Very few bees were dead, and in most cases the queens had continued laying, while *en route*.

The Isle of Wight disease has ravaged many apiaries, and the only likely means of mitigating its severity or of stamping it out seemed to be in employing a more resistant race than the common native variety, if such were to be had. In size Dutch bees are slightly larger than pure Italians. They are almost jet black. The queens are of good size, well developed, and carry three rings of slightly grey hair on the abdomen.

Dutch queens are extremely prolific, and breed late into the autumn. As a rule, the colonies are very populous, and yield good crops of honey in warm seasons; but in a cool wet summer the large populations consume much food, and are often in danger of starving if not fed. In Dutch bees the swarming impulse seems very highly developed. Colonies of medium strength will frequently construct 10 to 15 fine large cells in the preparation of swarming or when superseding their failing queen. They may continue to send out smaller swarms as the cells hatch after the first swarm has left. The bees do not use propolis excessively.

Temper appears to fluctuate in various colonies. Generally it is quite mild, but one sometimes comes across colonies with a habit of stinging vigorously when approached. From my own observations, and as a result of reports that have come in I should say that Dutch bees, both pure and crossed, are of great value in building up apiaries which have been reduced by disease; and I believe under careful management they will remain healthy in localities where disease is known to be rampant.

I have discovered that Dutch colonies with their natural fondness of constructing queen-cells are the very finest to use for starting and incubating artificial cups in a queen-rearing apiary. Whether queenless colonies or bees superseding their failing queen or upper stories are employed for raising cells, the results are equally good. Nearly all of each batch of cups given at one time are accepted, and lavishly supplied with royal jelly.

Some of the finest golden queens I have seen were reared by Dutch bees. In queen-breeding the best results are always obtained by having the queens bred in unrelated colonies of a different race, and Dutch bees are unexcelled for producing well developed, plump and long-lived queens.

When the war is over the restrictions which now hamper the importation of bees will pass, and I am not without hope that by greater selection and care in breeding from resistant stock we shall at last be able to wear out the Isle of Wight disease, and make bee-culture one of the most profitable of our rural industries.

Cheltenham, England.

A SHIPMENT OF DUTCH BEES AT AN ENGLISH RAILWAY STATION

Experience in Feeding Sugar Syrup

BY J. E. CRANE.

AS I have taken somewhat extreme views as to feeding sugar syrup to bees for winter stores, perhaps a more complete statement of my experience along this line may be of value to other beekeepers.

Having kept bees most of my life where little honey was gathered after clover and basswood, I have had considerable to do in feeding bees for winter.

When first I began to keep bees I thought that if I kept many it would be necessary to lay by a store of honey to feed in autumn or in poor years. Then I was told that if I would add cream-of-tartar to sugar syrup it might be fed safely, as the acid would prevent crystallization of the sugar. The laying by a large lot of honey to feed when needed seemed quite a burden, and if the use of the acid would prevent crystallization of the syrup it would be preferable, as I could buy the sugar when needed. I tried cream-of-tartar in the syrup, and it seemed to work very satisfactorily, as I found little granulation when such syrup was fed, and I was relieved of much anxiety about my bees starving to death in wintering after poor years.

Presently some one in some of our bee-journals said that vinegar was just as good as cream-of-tartar to keep sugar syrup from crystallizing in the combs and vinegar made from honey was just the thing. It looked reasonable and I tried it, and sure enough it worked just as well as cream-of-tartar. I could make my vinegar from honey rinsings or odds and ends not fit for the table and thus save the expense of cream-of-tartar. How fortunate to have learned this fact.

Later G. M. Doolittle, who has done a good deal of original thinking, gave his method of feeding sugar syrup and how he overcame the tendency of sugar to crystallize. His receipt was to dissolve two parts of sugar in one of water and bring it to the boiling point and then add one pound of honey to each six pounds of sugar used. [Prof. C. E. Bartholomew, of the Iowa State Agricultural College, makes the statement that syrup made of 85 parts of sugar to 50 parts of water will keep in-

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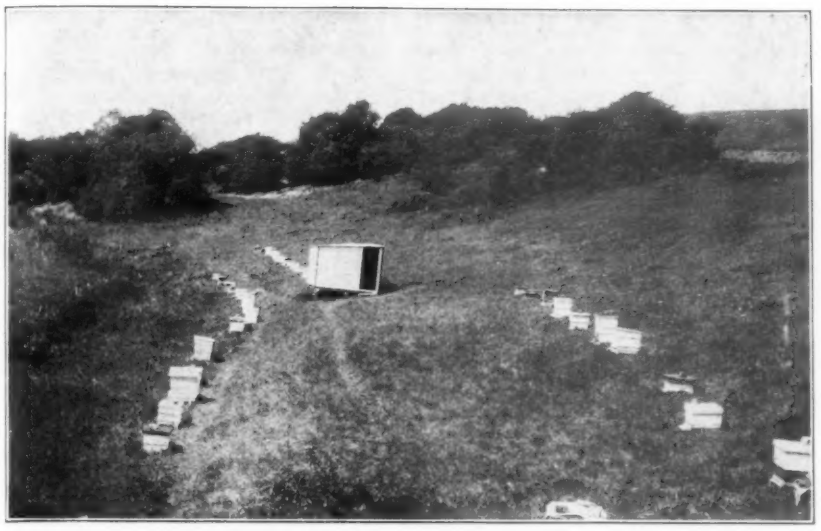

A. H. BOWEN'S APIARY NEAR CHELTENHAM, ENGLAND

definitely and will not crystallize.—Ed.] I tried it and it worked very well. There was but little granulation, and what there was appeared to be quite soft, so bees could readily dispose of it. As I had usually a good supply of extracted honey from unfinished sections, I was inclined to adopt this method to prevent granulation in preference to those I had before used, although I did not as a rule use quite as large a percentage of honey as Mr. Doolittle recommended. I have used this method for many years, and fed tons of honey with the sugar to keep it from granulation, even buying it by the barrel when I did not have enough on hand of my own for this purpose.

During the last few years the seasons have been very poor, and we have had a demand for all the extracted honey we could produce and very much more. It has seemed necessary to economize to the utmost. Was it really necessary to feed so much honey in sugar syrup to keep it from granulation? I had my doubts, and with some hesitation and a good deal of trepidation I actually fed some colonies a heavy syrup (two parts of sugar to one of water), half expecting to find many of the combs solid with sugar the next spring. But I found nothing to sustain my fear of feeding syrup clear, and in the fall of 1912 I did nearly all of my feeding without the use of honey or vinegar or cream-of-tartar. I failed to find any more granulated honey in the combs than in previous years. In fact, I found that nothing added to the syrup worked as well as the additions I had previously used. So well satisfied was I with results that I have used nothing to prevent crystallization for the past three seasons.

In the fall of 1914 we fed some five or six tons of sugar without the addition of a pound of anything to keep it from granulation. So much has been written of the value of cream-of-tartar or tartaric acid that I have watched the condition of stores in the combs in the spring of 1915 with unusual interest, and so far as I could see nearly all the granulated stores I found came from honey stored by the bees the previous summer. Two yards had secured enough honey to winter on, and in these we found the most granulation, while in those yards that had to be fed almost their entire supply for winter I found very little granulation, quite as little I think as when I tried to prevent it by the addition of honey or acids.

There are other fallacies that I may as well speak of at this time. One is the necessity of bringing sugar syrup to the boiling point to break up the crystallization of sugar. I have burned quantities of wood in doing it, but have found it wholly unnecessary. All that is needed is to melt, or rather dissolve it in the water, and as hot water will dissolve it quicker than cold, we use hot water but do not wait until it boils.

Again we have been told that we should feed early that the stores may be sealed up before winter. Certainly there are no objections to doing so, but I have so far failed to recognize any serious results following late feeding or unsealed sugar syrup in the combs. I presume we had two tons of unsealed syrup in hives in the fall of 1914, and where not consumed it looked in the spring as though it might have been placed in the combs the previous week. Sugar syrup does not appear to absorb moisture as readily as honey.

In looking over hives this spring I found some where the feeders leaked and the syrup ran down over the combs and on to the bottom-board. Such syrup I found as hard as so much ice, yes, harder, more like glass, and presenting a remarkable contrast to that in the hives that the bees had stored in the combs.

Now I would not say that tartaric acid is not desirable where syrup is fed 2½ parts of sugar to one of water. From my experience I would almost think it necessary to keep it from granulating before the bees would take it up unless fed to very strong colonies.

I have simply given my experience in feeding and the conclusions I have come to as a result of such experience. We are feeding again this fall, without the addition of anything to prevent the granulation of syrup made by two parts of sugar and one of water. It seems to me quite evident that bees know as well as we do how to prevent granulation, and I shall hereafter leave the matter with them.

Middlebury, Vt.

Weeds, Soils, and Honey

BY TARLTON RAYMENT.

Author of "A Treatise on the Bees and Nectariferous Plants of Australia."

WEEDS have been defined as "plants out of place," but there are some specimens that are obnoxious in any situation. Happily, the number absolutely useless is very limited. The apiarists of most countries are more or less indebted—at some period of the year—to the botanical pariahs for honey or pollen, perhaps both.

A wide and interesting variation occurs among the weeds. The methods of their distribution are no less wonderful and unique. Insidiously some "commandeer" the services of a bird's plumage or even the maw; while others utilize the fur of animals or the cloven hoof of cattle to spread their seeds over the countryside. Thus the miniature yellow suckling clover succeeds as a notable traveler though, it must be admitted, a rather spasmodic one. There are navigator seeds that nature has specially provided with a set of water-wings that peculiarly fit them for aquatic wanderings; an everyday example of which is the common dock of low-lying swampy country. Thistles, on the other element, evolved a scheme of aeronautics long before he to whom is given dominion over the beasts of the fields and the birds of the air.

Modern agriculture has, unintentionally, been the means of distributing many weeds through the agency of impure seed. A few of the unbidden guests have subsequently proved themselves the friends of the graziers and the apiarists. Quite a few have developed from persistent weeds into esteemed fodder plants. The question arises whether the term "weed" is not then a misnomer.

The cape weed (*Cryptostemma calendulaceum*) is a striking example. Botanists class it with the Compositæ, and definitely state that "it possesses no food value," though this is disproved by the experience of practical dairy farmers. Introduced to Australia from Africa, this plant so readily acclimatized itself that every State in this vast commonwealth is now familiar with its yellow bloom in early spring. It is not infrequently referred to—though erroneously—as dandelion. Indeed, the similarity is in the general aspect of the fields during golden inflorescense. Closer examination of the flowers reveals only a single row of petals similar in many respects to a marguerite. The center is dark colored and characteristic of the composite order to which belong thistles, sunflowers, etc.

It is notable that while a weed may be actually deleterious to stock in some localities, transplanted to other soils in distant fields it becomes a pasture of no mean value. In South Gippsland, which forms the mountains and most southerly portion of Australia, the deep rich soil is volcanic in origin

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—therefore acid—and of a bright ferrous-red color. White, red, alsike, crimson and strawberry clovers grow in abundant profusion as do also all English grasses. The cape-weed flourishes likewise, and the plants approximate in size America's best specimens of dandelion.

Northward, 50 miles distant, are the extensive plains of Gippsland. The shallow, gravelly, hungry soil has been composed—through the centuries—by the "breaking down," if we may use the term, of the original conglomerate rock forming the higher levels. The climate is distinctly drier and hotter. In spring, especially if it be a wet one, the rather dreary landscape is transformed into a succession of fairy fields gloriously "powdered" with the prolific blossom. It is ubiquitous for even the roadsides flame like golden ribbands. It is overwhelming for no other plants are discernible amid the floral glow. Cattle grow sleek and milk profitable on the feast of flowers, yet the most fastidious critic would fail to detect any abnormal taste in either milk or butter.

From morn till dewy eve the bees gather the harvest of pollen and nectar. Colonies breed up in quite a wonderful manner, and even store a surplus of honey. An average of 30 pounds per hive was recorded from this source. The density of the honey is not as great as that from the eucalyptus, but of course the product of the trees mentioned is exceptionally heavy. The flavor is best described as a distinctive nutty one not acceptable while the ripe golden hue resembles the color of American goldenrod honey. Like that of most ground flora the honey quickly candies with a coarse grain. The crystals are murky drab in color and very large. Beeswax produced during the flow also partakes of the pervading yellowness. So swiftly has the cape weed traveled since its advent to Australia that it is now common to all States, and has been described as "the most valuable pollen plant in the commonwealth." While the writer regards this dictum as too sweeping, it serves to indicate the Austral beekeepers' esteem for the weed.

In New Zealand, which is a typical clover country, the pennyroyal (*Mentha pulegium*) has monopolized whole tracts of country in a most alarming manner, so much so that the plant has materially altered the flavor of the Dominion butter. After the controversy in America regarding the merits of sweet clover, it is not irrelevant to point out that Vincent Jackson, B. A.—an authority in New Zealand—states the yellow sweet clover there develops an objectionable woody fibre so that stock rarely eat it. On a small speck of land south of the Australian mainland, the "King Island melilot" (*Melilotus alba*) flourishes. It covers many thousands of acres, but as the writer is aware no apiarist has "tried out" the island. King Island is famed throughout the continent for its fat cattle raised on melilotus.

The difficulty of discovering the right name for each plant is quite a desideratum when speaking of foreign species. For instance, the American viper's bugloss or blue thistle" is an old Victorian identity masquerading under the title of "Patterson's curse" (*Echium violaceum*). It was named after a misguided settler who introduced it to Victoria. The "bugloss" or "curse"—whichever is preferred—is not of course a true thistle, though it is a good honey-plant.

In conclusion, the writer has tried many American plants, but the results, with few exceptions, were not encouraging. The honey locust is a beautiful success, but the tulip tree, goldenrod, buckwheat, and spider plant were downright failures for producing nectar. Borage is very good in the heavy rainfall districts. The clover country rarely produces much over 30 pounds per hive, and this where the hills are quite covered with red or white bloom. On the other hand, the river-flats clothed with strawberry clover—a distinct creeping variety—are very good for honey. Victoria, Australia.

THE CAPE WEED OF AUSTRALIA

DR. MILLER'S ANSWERS

Send Questions either to the office of the American Bee Journal or direct to
DR. C. C. MILLER, MARENGO, ILL.
He does NOT answer bee-keeping questions by mail.

Miscellaneous

1. I hived a second swarm of bees on frames with full foundation, and they had been hived only seven days when late in the afternoon I noticed them fighting. They did not look like bees trying to rob, but field bees coming in from work. As soon as they would light, the bees coming out of the hive would pounce upon them. I reduced the entrance. The next morning they were still fighting, and there was a big pile of dead and crip-

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pied bees in front of the hive. Still, it did not look like bees robbing. I was wondering what I could do when the bees swarmed out. I opened the hive they were in and they had not done a thing, the foundation was the same as it was when I hived them eight days before. They had lots of ventilation and shade. What was the cause of them acting this way?

2. In the spring I had one weak and one queenless colony, side by side. I gave a Caucasian queen to the queenless one. On the last day of June, I noticed toward evening that the weak one did not fly much and clustered outside. I thought they were going to swarm. At this time there was just enough honey and pollen coming in to keep brood-rearing in good shape, but no surplus honey. The next day they did not fly as much as before and clustered out more, and the next day they flew less and clustered out still more, and the next day not a bee flew, and all clustered on the outside. All of my other hives were carrying in pollen and I could not understand it, so I opened the hive and lifted off the super, and found there was not a bee in it, and very few bees on the combs. They were almost starved to death. I gave them some frames of sealed honey, and by the next day they were carrying in pollen the same as the rest. I thought if the bees were that near starved I need not look for a swarm from my Caucasian swarm, but the next day it swarmed out, and went to parts unknown. I opend this hive and found there was not very much honey in it, but I never saw as much brood in a hive as that one had. I cannot understand what would make the difference in two hives set within five feet of one another.

3. I made some bees queenless, and in seven days cut out all queen-cells. Fourteen days later the bees swarmed out and I hived them back in the same hive. I expected the queen to be small and poor, but she proved to be large and prolific. Does it often happen that way?

4. If you handle bees in a locality where the main honey flow is from heartsease blossoms, in what way would you put up that honey for the market, comb, extracted or bulk honey? In this locality heartsease honey, or smartweed as some call it, is dark and has rather a strong taste. OKLAHOMA.

ANSWERS.—1. I can only make a guess in the case. It may be that a swarm from another hive tried to enter, and was repulsed. With plenty of ventilation and shade I don't know why the bees should swarm out unless as a sort of hunger-swarm.

2. There may have been more honey in the Caucasian colony in the first place, enough so that there was no fear of starvation, although but little left when they swarmed.

3. No, I don't think it often happens that way. Still, there is nothing so very much out of the usual. The bees swarmed out 21 days after they had been made queenless. That was not at the time the queen emerged from her cell, but at the time she took her wedding-flight, which is usually 20 days or more from the laying of the egg. The only troublesome factor in the case is the supposition that the bees started a cell seven days after the removal of the queen, making the larva at least four days old, from which no queen could be reared. But it would be an easy thing for you to miss a cell that had been started two or three days earlier, since it would be a very small affair, especially if on the center of a comb. In that case the queen could be all right.

4. That depends on your market. In some places it would be all right in sections, and in others extracted.

Wintering—Ants

1. I have 50 colonies of bees all in 8-frame hives, 20 of them (the old original colonies) have one-piece flat tops, and 30 of them (this spring's swarms) have flat metal tops with inside covers. Last winter the ones with the flat tops appeared to have moisture condense on the under side of the lid and drip down on the combs and cause them to mold. I had one thickness of muslin between the hive and cover. How can I prevent this? I winter out-of-doors.

2. In putting the metal tops together, I put eight or ten thicknesses of newspaper between the metal and board. Is this style of top likely to give trouble in the same way?

3. I have a few bee-escape boards which I use in removing the honey, but I haven't bee-escape holes cut in the inside covers. Is it best to cut these holes and then cover them with burlap in the winter?

4. How can I rid my apiary of red ants? They build their hills near, and sometimes directly under the hives and crawl into the hives and kill the bees.

5. In hiving a swarm do you put them in at the top or bottom of the hive?

OREGON.

ANSWERS.—1. Put a nail under the cover so as to make a slight escape for the moisture; also pile some sort of packing 6 inches thick on top of cover.

2. Not so much.

3. Yes.

4. Have 4 feet to the hive, each foot standing in a little vessel of oil or water. Find the nest of the ants, with crowbar make a hole in the nest and pour in carbon disulfide.

5. It doesn't matter so you get them into the hive, but generally you will find it easier to get them into the hive at the bottom, as bees of a swarm naturally incline to crawl upward.

Shallow or Full-Depth Super—Packing

1. I have been running for comb honey but intend to run for extracted, but do not know which kind of super to adopt, the shallow or the full depth. I have had a little experience with the shallow this summer, but thought I would like to try the full depth but for one reason, and that is on account of the inconvenience of handling when full of honey. If I use the full depth, will it be possible for me to take off the honey alone or does it require two persons, one to raise the super and the other one to slip the bee-escape under? As I have to work with the bees alone, I would like to have your knowledge and experience on the matter.

2 Do you think that if given a full depth it would lessen the chance of swarming more then if given a shallow super, and when half full give another?

3. Is two inches of packing material between hive and winter-case sufficient in this climate, the thermometer registering sometimes as low as 15 or 20 degrees below?

MINNESOTA.

ANSWERS.—1. You can manage with either alone, although of course it is easier with the shallow frames.

2. No, on the contrary those who use shallow extracting-frames say they are a help toward prevention of swarming.

3. Two or three inches will do at the sides, with four to six on top.

Probably Queenless

I have 7 colonies of bees, and they are all doing fine but one colony. They don't seem to work any, have only filled one super this season, and seem to be eating up the honey they have made. I do not know a queen, so I cannot tell if they have a queen. The hive is full of bees. What is the trouble, and what can I do for them? PENNSYLVANIA.

ANSWER.—You can easily tell whether a queen is present without being able to see her. Look and see whether eggs or young unsealed brood can be found. If not, you may feel pretty sure there is no queen in the hive.

[It would not be surprising if no eggs or brood were present in a normal colony as late as October.—EDITOR.]

Miscellaneous

1. At about what date do you contract from two hive bodies to one, and how do you do it, by shaking? I assume that most of the workers must be left in the single chamber, so that the gathering force there may be as strong as possible.

2. If you do shake, doesn't it make the system very similar to the Doolittle plan?

3. I see by Mr. Root's account of his visit to you, in last Gleanings in Bee Culture, that you still had supers on Sept. 6. Do you leave them on until the fall flow is exhausted?

4. If so, don't you find that the stores in the brood-chamber are very scant as cold weather comes on, and that considerable feeding is necessary? That was my experience this year, and it occurred to me that I might have done better to take off all the supers by Sept 1 and force the late flow into the brood-chamber for winter stores.

5. I imagine our climatic conditions are very much alike. At what date did you remove the last of the supers this year?

6. Do you endorse the suggestion of Alexander as to running part of one's colonies for extracted honey and feeding back into the comb-honey hives to provide continuous supplies there for night work, and at times when weather prevents field work?

7. I fed back this fall some partly filled combs which I had had on weak colonies to get foundation drawn out. I made a box that would just hold two frames and fit over the wooden block of a Boardman feeder, the box being arranged so that bees couldn't enter it except from inside the hive that was being fed. Do you know of any objection to that plan, either in the summer or late fall? Is it just as good to feed the honey back that way as to extract and dilute somewhat? ILLINOIS.

ANSWERS.—1. You will find in "Fifty Years Among the Bees," that about as soon as clover-bloom begins, or at least within ten days after seeing the very first blossom, I give section-supers, and at that time I reduce to one story, leaving in that one story all the brood I can and all the bees, shaking or brushing all the bees from the combs I remove.

2. Mr. Doolittle gives an upper story with a considerable stock of honey; I give a lower story with generally no honey.

3. Sometimes, and sometimes I take off sections and give combs to be filled for use the following spring to feed the bees.

4. No, by the time the fall flow is over, if not some time before, the hives are heavy for winter. Years ago, however, it was not so. Either the pasturage has changed or else the bees.

5. The last super was taken off Sept. 30. It might perhaps have been as well a little earlier.

6. I never made a success of feeding back to have the honey filled in sections.

7. I have not had experience enough to say.

Bee Paralysis

In July my neighbor robbed his bees of what honey they had in the super, and a few days later the bees began to die. They would come out of the hive and start to fly away as though going to work, but would fall to the ground as if they were loaded with honey. Some would get a foot or 18 inches from the hive, others would tumble off the edge of the alighting-board and they would all crawl around on the ground and die. None of them ever flew again after their first attempt. INDIANA.

ANSWER.—It sounds like a case of bee paralysis, in which you will probably find a trembling of the wings and the bodies of the bees swollen. In the South it is sometimes formidable, but as far North as you are it generally disappears without doing a great deal of damage. Many cures have been offered, only to fail the next time they are tried. Perhaps the most hopeful remedy is to sprinkle sulphur on the combs and at the entrance.

The Strain of Italians—Basswood Trees

1. I am a beginner, and have about 30 colonies of bees, the first of which was a stray swarm. The bees are grey striped with four yellow bands, the width of which vary. I wish to keep pure Italians. What kind of bees would you say I now have? I understand most people prefer leather-colored Italians. Are they the same as 3-banded Italians? Are goldens the same as 5-banded Italians?

2. If I purchase three Italian queens next

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spring and use drone-traps as much as possible on my remaining colonies, what percent of the Italian queens which are reared will be purely mated?

3. How can I be absolutely sure that they are not crossed with my bees? The only bees near me are four or five colonies which are three-fourths of a mile distant.

4. Would Italian bees store enough more honey per colony so that it would pay to requeen each colony?

5. My location is such that I can now keep about 300 colonies; however, I wish to plant about 1000 basswood trees along three miles of road fence. Would they be too close together?

6. How many colonies would they supply work for, counting 75 pounds of surplus per colony?

7. If there are different kinds of basswood trees, which is the best honey producer?

8. Where can I obtain the seed?

9. At what time would it be best to plant it?

10. How many years would it be before the trees would produce any amount of honey?

11. How much comb honey can one expect from a colony during a good season, provided no increase is made? ILLINOIS.

ANSWERS.—1. Your bees are most likely Italian. Leather-colored Italians are 3-banded, but not all 3-banders are leather-colored. If I am correct, 5-banders and goldens are the same.

2. I don't know. Maybe 60 percent, maybe 90.

3. There is no easy way by which you can be absolutely sure. You might come near it by keeping in cellar the nuclei with virgins and drones, then taking them out and by feeding stir them up to flight in the afternoon after the other drones have ceased flight.

4. Possibly; possibly not. Depends on how good they are.

5. They would do all right, being nearly a rod apart, but it would be better to have them farther apart.

6. I don't know, and I don't know of any way to find out.

7. There are the American and the European. I think the American is the better, but I'm not sure.

8. It is possible you can get the seed of seed dealers, but it ought not to be difficult to get some one who lives where basswoods grow to save seed for you, a single tree yielding a large quantity of seed.

9. Probably in the fall.

10. I think something like 15 years from the seed.

11. The amount varies greatly; from nothing to 300 pounds or more. Dr. E. F. Phillips estimates the average at 25 to 30 sections per colony. That, of course, takes good seasons with bad. If you take good seasons alone, it might be twice as much.

Old Combs

1. Will combs that have had brood reared in them from one to three years spoil the color and flavor of honey if used for extracting frames?

2. Which makes the best extracting frames the shallow frames or the regular brood frames? OHIO.

ANSWERS.—1. There may be a slight difference, but you probably could not tell the honey from that stored in newly built combs.

2. Shallow frames are in some respects better; but it is a little less troublesome to use frames of the same size as in the brood-chamber.

No feeder

How will this new plan of feeding bee work? Place tin containers about the size of a half pound baking powder can *cover*, containing bee candy, above the brood frames, inside a 1-inch wooden frame to fit on the top of the hive under the cover. These tin containers set side by side just bove the brood frames, would be in the warmest part of the hive, and their candy contents would be easily accessible to the bees through the holes between these circular tin containers. This plan of feeding is easily adjustable, as a sufficient number of feed containers can be used for either large or small swarms with no danger of feed running out to kill the bees. Tin can manufacturers can supply these at small cost. CALIFORNIA.

ANSWER.—This plan would work all right, I should think. In weather a bit cold the bees would not reach the candy quite so readily as if laid directly on the top-bars.

Size of Hives

1. I purchased a colony of bees in a home-made hive with outside measurements, Twelve inches high, 18 inches long, 13 inches wide and ½ inch thick. Is this a standard size?

2. How far apart should frames be placed in a hive to prevent cross-building and bracing of comb?

3. I would like to know if there is a book on making hives? OHIO.

ANSWERS.—1. No, it is not a standard size.

2. The spacing in general use is 1⅜ inches from center to center, but some excellent beekeepers prefer 1½ This for the brood-chamber; but some space wider in extracting-supers, up to not far from 2 inches. But the spacing does not prevent cross-building. That is done by filling the frames with comb foundation, or at least having starters of comb or foundation.

3. I know of no such book.

Good Locations for Beekeeping—Best Hive for Comb Honey

1. I would like to find out what part of Illinois and Wisconsin is best for beekeeping?

2. What kind of land is best adapted for beekeeping?

3. Name the kind of pasturage I must have to get good honey?

4. On 10 acres of land how many colonies could I have?

5. What is the best kind of hive for comb honey? ILLINOIS.

ANSWERS.—1. Good locations are scattered all over both States. Your problem will be to find one not already occupied, or one where you can buy out another beekeeper.

2. Perhaps where there is lime enough for clover to do well.

3. White clover, basswood, and fruit blossoms are a few of the principal honey-plants in the States named.

4. A very large number of colonies can be put upon 10 acres if surrounding pasturage is enough to support them, although generally there will not be pasturage for more than 100. But if you mean the bees are to forage on no more than the 10 acres, it would have to be extra good pasturage to support 10 colonies

5. The majority of beekeepers seem to think nothing is better than the 10-frame Langstroth, or dovetailed.

Queen in Nucleus

1. I have a fine breeding queen that I put into a nucleus in the early spring. The result was that my queen became so feeble that she did not lay at all, and the bees tried to supersede her. To save her, I put her into a strong colony and she went to laying, and has as fine a colony of bees as I have ever seen. What was the cause of her not laying in the nucleus?

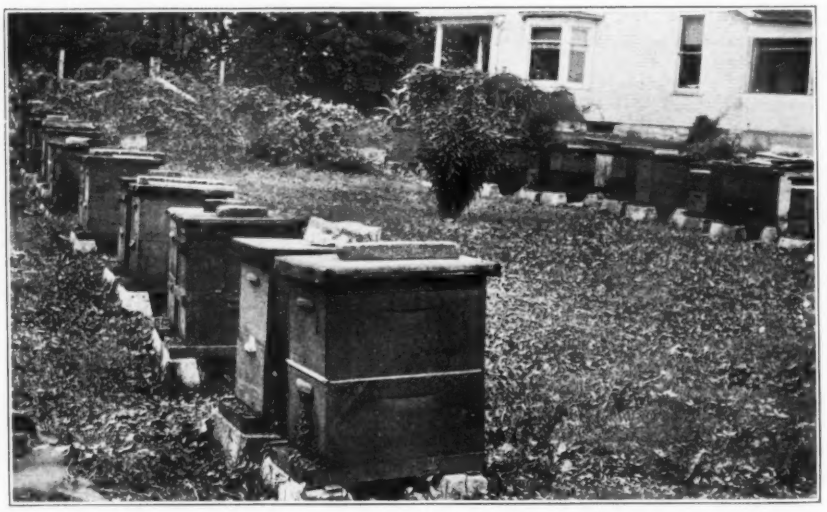
2. Will this queen be good next year?

3. Have you ever experimented with a queen to see if she would stop laying if put with just a few bees? TEXAS.

ANSWERS.—1. I can only guess. My guess would be that you introduced the queen into a nucleus the bees of which were somewhat hostile to her, but still allowed her to lay enough so that they could start queen-cells; or that she didn't lay at all, and the queen-cells were started on brood they previously had. Then she was introduced into a full colony that was in a humor to receive her kindly, when she did good work. Possibly you may object to this that she was not introduced into the nucleus, but that the nucleus was formed of her own bees In that case it might be that something may have happened in forming the nucleus, or in handling it afterward, that made the bees hostile to the queen, for you probably know that it sometimes happens that the queen is balled merely because the hive has been opened. You seem to lean toward the belief that she did not lay because the nucleus was weak. Might be, but for the fact that the bees tried to supersede her, that superseding showing that the bees were not fully satisfied with her.

2. In considering what she might do next year, I think her last performance should be considered rather than the previous performance in the nucleus, for her after-performance showed her to be a good queen, and the previous trouble was with the nucleus rather than the queen; so she *may* be all right for next year.

3. Never experimented directly in that way. But I have had quite a number of cases in which a queen was introduced into a colony and remained a week or more with-



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out laying, and then went to laying all right, although in some cases laying only a few eggs and being superseded.

Metheglin

Please give me directions for making metheglin or honey mead. ARKANSAS.

ANSWER.—From 1½ to 2 pounds of honey to a gallon of water, with some grape juice or apple juice in small quantity to start fermentation, with the temperature at 70 degrees or more It must be kept well covered and yet the gases must be allowed to escape. If air is allowed freely to it, it will soon turn to vinegar and make excellent vinegar.—EDITOR.

Wintering Out-of-Doors

I am preparing to winter the bees out-of-doors. The question arises, will the bees be smothered in case the snow drifts over the hive entrances? One neighbor beekeeper tells me he thinks not. Another says that the entrances should be kept free from snow or the bees will be smothered.
WISCONSIN.

ANSWER.—Bees have wintered well in some cases when buried in snow, and very poorly in other cases. Sometimes when buried deep a space melts about the hive, leaving the bees with good air and in good condition, yet sometimes brood-rearing starts and the bees come out in bad shape. Where buried lightly, snow may fill the entrance in a sort of slush and freeze solid, resulting disastrously if the entrance be not opened. So you see your informants may all be right.

REPORTS AND EXPERIENCES

October Swarm

I have several times read of September swarms. I found a swarm hanging in a tree Oct. 18. I put it in a hive with frames of comb, one frame full of honey and a super partially filled. The bees are doing fine, although I have failed so far to find any eggs. They have a queen, but I don't know whether she is fertile. J. H. WARREN.
Elliott, Iowa, Oct. 24.

Ton of Comb-Honey from 56 Colonies

The season has been the worst in a long time in this locality, but I think my bees have done fairly well considering the season. I have about a ton of comb-honey from 56 colonies, spring count. I also had a little foulbrood (European), but I think I have cleaned it up, partly by the dequeening method and requeening with Italian queens. The worst cases I shook and then requeened them.

I have mostly Italians and hybrids, and have also introduced a few Caucasians and Carniolans to try them. JOSEPH COOK.
Watertown, N. Y., Oct. 9.

Aster Honey

The fall of 1913 was rainy and chilly about the close of the aster bloom, so that the late gathered honey from all sources was not well ripened. I had to provide a tank with heat under it to ripen the honey which I had to sell.

In the spring two of a dozen colonies were dead I was not able to determine positively what was the real cause, but there was that coincidence — unripened aster stores and two lost.

The fall of 1914 was very dry for weeks, and warm. I found brood in every hive as late as Oct. 20. Bees were flying freely after all bloom was long gone, and I have never had colonies come through so uniformly strong and prosperous.

My belief agrees with your "impression that the main reason why 'aster honey is bad food for winter,' is that it is harvested so late that much of it remains unsealed ....." and unripened.

I regard that feature of the fall flow as a handicap, and as making a fall flow less desirable.

This fall was so wet, dark and cold during aster bloom that the bees got practically none of it, as it was gone when the weather cleared. The result is rather scanty stores.
New Jersey. DOCTOR SMOKER.

Two 8-Frame Stories for Wintering

The enclosed photograph is a view of my apiary, and was taken just after the supers were removed and the extra hive-body was added for winter. For the past few winters I have practiced giving some extra combs which I place in an extra hive-body and place this body on the bottom-board with the brood-nest on top. My method has been so satisfactory and so easy of manipulation that possibly some other amateur beekeepers may be benefitted by my experience.

After removing the comb supers and about the time the queens cease laying, I give two or four frames of honey (I use Hoffman frames) to each colony. E. H. UPSON.
Ubee, Ind.

My Bees Wintered Well the Past Two Winters

My bees wintered well in 1913 and 1914, so they were in fine condition for the harvest when it came. I harvested 6000 pounds of extracted honey from 120 colonies, which was good enough for a poor season. I always leave plenty of honey in the hives to make the bees feel rich in spring.

Plenty of bees, plenty of honey and a young queen, with a warm hive and a sheltered location make the bees get there for the honey harvest. OTTO BANKER.
Sleepy Eye, Minn.

Heat Treatment for Stings

For treating stings I have found my smoker quite handy. Rub the sting off and apply the smoker as close as possible without burning. A match will have the same effect. Remove the sting and hold the burning match as close as possible. This heat treatment I have found to be the best cure for stings. H. E. MYERS.
North Yakima, Wash.

Fertilized Queens Going Back to the Right Hive

With my 4-colony cases, I have been unable to have queens fertilized and go back to the right hive until I tried pasting different colored paper on the doorsill, so Miss Virgin could remember the color of the carpet to cross before reaching home.

The first amendment is, lay a stick at right angle near the entrance, as a guide. It worked well in my locality. Possibly this may be the *finis* on modes of queen introduction. F. F. GEORGE.
Fraser, Idaho.

High Pressure Beekeeping

The DeSoto Argus tells that Wm. Bates, of that village, has made quite a reputation for himself as a bee culturist this season. He started out last spring with but 7 colonies of the busy little honey makers, and today has an increase of 50 colonies.

Mr. C. C. Bishop was in from Retreat on Friday making a delivery of honey to George Sweger. He kept strict account of the work of 10 colonies for 10 days, and the product of extracted honey amounted to just $100, or one dollar a day for each colony.—*Viroqua* (Wis.) *Censor*.

Fair Season, But a Dry and Hot Summer

We had a fair season notwithstanding our exceedingly dry and hot summer. Bees are still storing honey from aster. Goldenrod is about over. Four-frame nuclei, of which we will winter 400 stocked with young queens, mostly of September rearing, will begin the winter with four frames nearly solid with stores of their own gathering.
J. W. K. SHAW & CO.
Loreauville La., Nov. 5.

Fine Fall Honey

We produced 3000 sections and 10,000 pounds of extracted honey this season, and bees are in fine shape for winter. Our fall honey, mostly from heartsease, is as white as clover. I can't understand it. It is very mild in flavor. The finest fall honey I ever produced. W. S. PANGBURN.
Center Junction, Iowa, Nov. 10.

Lesser Beemoth or Brood-Worm

In answer to a question asked by "Rhode Island" about the lesser beemoth (I call it the brood-moth), I guess it is the greatest pest the southern queen-breeder has to contend with.

This worm will get so well established that sometimes it will cause good average colonies to swarm out. The fly is very small, and is usually found in the bottom of the nuclei. They are worse in south Texas than anywhere I have ever kept bees.
Buffalo, Tex., Nov. 4. C. B. BANKSTON.

The Honey Market—A Lion and a Match

Our friend, M. H. Mendleson, of California, has given on page 333, the exact condition of the honey market in Arizona. I agree that organization with representation to see that duty is again placed on foreign honey is the only thing that can save us financially. But what shall we do with honey already on hand?

There are plenty of beekeepers who are not salesmen, and they must either sell below cost or drum up home trade.

I have lately disposed of about 10 tons of

APIARY OF MR. J. COOKE, WATERTOWN, N. Y.

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honey, with 21 tons left on hand. I took trips to widen my sales, and visited the towns and mining camps of northern Arizona, climbing with my load up the mountains and reaching Prescott, a beautiful city, framed like a picture with mountains clad in green pines. This is a dear spot for me, for there I buried my wife nine years ago.

After drumming the city and selling my load, I started on my return home, where my 13-year old son and a housekeeper were left to care for 1500 colonies of bees and a farm. I left the city late in the afternoon. When night overtook me on the top of a pine-clad mountain, I tied my horse securely, fed him and wrapped myself in my blanket. I was fast asleep when a fierce snort from my horse awoke me. Luckily I had that day picked up a match in the street of Prescott. It was the only weapon I had. I struck it and set fire to hay and brush near me and scared away a mountain lion.

My horse is mountain raised, and had probably seen some of his mates attacked by these beasts. A neighbor has since told me that a few days before he had roped a two-year old steer which was killed shortly after by a lion in broad daylight.

The bees in our valley have done well from the first crop of alfalfa, but had very little from the second crop.

Buckeye, Ariz. B. A. HADSELL.

Late Season—Turned Out Good

After a most unpropitious season, and one which looked like being an absolute failure again, we were suddenly awakened to the fact that the bees were gathering nectar at a tremendous rate, which lasted for over three weeks, and at the end of that time our apiary looked like a miniature city of sky-scrapers, and from 36 colonies, spring count, or rather 14 colonies and 22 nuclei, for that is what spring dwindling had really left me, I harvested between 2800 and 3000 pounds of extracted honey, some colonies storing 120 to 140 pounds, this with an increase to 52 colonies, mostly by natural swarms. Clover was a month later than usual, and the same might be said of thistle and other sources of nectar. B. BREWSTER.

Greenridge, Manitoba, Nov. 4.

Missouri Meeting.—In our last issue the date of the Missouri meeting was given as Dec. 3 and 4 instead of January. President Rouse writes us that it has been decided to hold the meeting at Columbia during Farmers' Week, in order to secure a larger attendance.

Indiana Beekeepers to Meet.—The Indiana State Beekeepers' Association will meet at the State House, Indianapolis on Dec. 10 and 11. Dr. Phillips and E. R. Root and others have promised to attend. The program will contain some most excellent numbers. Among other good things the postmaster of Indianapolis will give full directions and instructions how to build up and conduct a parcels post sales campaign. This number alone is worth coming to hear.

GEO. W. WILLIAMS, *Sec.*

Redkey, Ind., Nov. 18.

Illinois Convention.—The 25th annual meeting of the Illinois State Beekeepers' Association will be held in the Council Chamber of the City Hall at Springfield, on Monday and Tuesday, Nov. 29 and 30, 1915.

The meeting called to order by Pres. E. J. Baxter, of Nauvoo, at 10 o'clock a.m.

Invocation—Rev. Geo. F. Gunter, Pastor 2d Presbyterian Church.

Welcome Address—Mr. Wm. H. Conkling, Secretary of the Springfield Commercial Association.

Response and President's Address—Pres Baxter.

Order of business taken up

FIRST DAY—AFTERNOON SESSION.

Address—"Outdoor Wintering," Dr. E. F Phillips, Bureau of Entomology. Washington, D. C.

Report of A. L. Kildow, State Foulbrood Inspector, of Putnam.

Papers by Mrs. A. L. Kildow, of Putnam, and Mr. C. F. Bender, of Newman.

SECOND DAY—FORENOON SESSION.

"Bees and the part they play in the cross-fertilization of our fruits and field crops"—C. P. Dadant, former president, Hamilton.

E. R. Root, Editor of Gleanings in Bee Culture, of Medina, Ohio. Subject of his own choosing.

QUESTION BOX ALWAYS OPEN.

Election of officers and photograph for the report.

SECOND DAY—AFTERNOON SESSION.

N. E. France, of Platteville, Wis., is expected at this hour; the subject we do not know, though we do know his ability.

Prize essays, $5.00, $4.00, $3.00, $2.00, $1.00.

The Secretary wishes to say, with the ability we have represented in this program, and the subjects they will handle, it will be of interest not only to beekeepers but to everybody, and so everybody is invited.

Discussions and *sine die* adjournment.

Headquarters at the St. Nicholas Hotel—Rooms, European, $1.00 and $1.50; American, $2.50 and $3.00. Annex (to St. Nicholas), American, $3.00 and $3.50; European, $1.50 and $2.00.

Those desiring cheaper hotel can find it. JAMES A. STONE, *Sec.*

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